ESTABLISHED IN 1872

PAPER TRADE JOURNAL

With Which Is Combined

Vol. XCIX, No. 5 PAPER Thursday, August 2, 1934

W. W. Pickard Is Confirmed as Coordinator

The Function of the Coordinator Will Be Primarily to Assist in the Adjustment of Differences Between the Respective Industries—In Addition Mr. Pickard Will Be Available as Advisor to the Code Authorities and to Adjust Differences Between Code Authorities and Members of Their Industries

A meeting of representatives of the industries who are participating in the coordination plan was held on July 27 at which formal organization was completed and the appointment of W. W. Pickard as coordinator was confirmed.

Those Who Attended

The following were present at the meeting:
S. L. Wilson of the Paper and Pulp Industry.
W. J. Alford of the Paperboard Industry.
Arnett W. Leslie of the Paper Distributing Trade.
C. H. Ferris of the Container Industry.
R. R. Richardson of the Folding Box Industry.
E. V. Johnson of the Envelope Industry, and
E. F. Melia of the Paper Bag Manufacturing Industry.

Mr. Pickard has established an office on the 31st floor of the Chanin Building, 122 East 42nd street, New York. He will have as his assistant Miss Jean A. Montgomery who occupied a similar position with him during his time as Deputy Administrator.

The Function of the Coordinator

The function of the coordinator is primarily to assist in the adjustment of differences between the respective industries. Typical cases of this character are questions of jurisdiction due to the overlapping of codes or ambiguities in code definitions; questions growing out of competition between the products of different industries; questions growing out of the application of several codes to the same plant; questions growing out of conflicting trade practices of manufacturers and distributors and others of similar character.

In addition Mr. Pickard will be available as advisor to the Code Authorities and to adjust differences between Code Authorities and members of their industries. He will also continue the work, which he did as Deputy Administrator, of educating members of the industries to the advantages of cooperation and industry action as against individualism. For this purpose will be available to attend as many industry meetings as his other duties will permit.

All Matters to Be Handled Personally

Mr. Pickard has no intention of taking over the functions of Code Authorities or of their legal and other advisers, nor will he have any extended office organization. All matters which fall within the scope of his duties will be handled by him personally. This will make it impossible for him to devote his attention to the problems of individuals except as they are general in character and are referred to him by the Code Authorities.

Mr. Pickard assumed his duties as Coordinator early in July, in advance of his formal appointment, and has already found that the problems presented to him are both numerous and difficult.

Major Berry Commends Mr. Pickard

Mr. Pickard has received the following letter from Major Geo. L. Berry, Division Administrator of the NRA:

"On behalf of General Johnson as well as the undersigned, this means is being taken to express our very deep and profound appreciation of the service you have rendered as Deputy Administrator in the N.R.A.

"Your withdrawal from this service is deeply regretted, but I express the hope that your new association will be both congenial and advantageous to you.

"It is my personal opinion that your new work will be especially advantageous in carrying out the purposes of the N.R.A. Obviously, your intimate and personal understanding of the newsprint and allied industries gives you an advantage for service that would be difficult to adequately estimate."

Waste Paper Code Posters Available

Announcement was made on Thursday of last week by Chas. M. Haskins, secretary of the Code Authorities for the Non-Ferrous Scrap Metal, Waste Paper, Cotton Rag and Scrap Rubber Trades, that 15,000 official posters covering the wage and hour provisions of the Code of Fair Competition for the Scrap Iron, Non-Ferrous Scrap Metals and Waste Materials Trade had been received at the offices of the above-mentioned Code Authorities, 1109 Times Building, New York, and are now ready for distribution.

These posters are the official posters printed in Washington, which must be immediately posted by every dealer subject to the above-mentioned code.

Government Printing Office Asks Paper Bids

Will Be Opened August 20 by the Joint Congressional Printing Committee for a Six Months Supply for the Six Months Period Beginning October 1—Is Estimated that 27,586,000 Pounds Will Be Needed As Compared With 12,780,000 for Previous Period

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., August 1, 1934—As announced exclusively in PAPER TRADE JOURNAL the Joint Congressional Committee on Printing is to make another effort to buy a six months supply of paper for the use of the Government Printing Office so that it will not have to purchase it on the open market as at present.

In that connection announcement has just been made that bids will be received on August 20 for a six months supply beginning October 1. Awards will be made one week later, if they are made.

27,586,000 Pounds Needed

It is estimated that for the six months period 27,586,000 pounds will be needed compared with 12,780,000 pounds for the previous contract period of three months.

In its report to the Joint Congressional Committee, the Paper Specifications Committee, states that "the Paper Specifications Committee decided that no changes in requirements are necessary at this time because the specifications submitted to the Joint Committee under date of April 6, 1934, were prepared to meet the needs of the public printing and binding over the fiscal year 1935. Only a few minor corrections were found necessary."

Estimated Quantities Wanted

The approximate estimated quantities set forth in detail in the schedule comprise the following;

1,500,000 pounds newsprint paper.
3,640,000 pounds machine-finish book paper.
60,000 pounds antique book paper.
110,000 pounds lightweight machine-finish book paper.
190,000 pounds 50% rag machine-finish book paper.
20,000 pounds 75% rag laid antique book paper.
20,000 pounds 100% rag machine-finish book paper.
885,000 pounds supercalendered book paper.
40,000 pounds half-tone book paper.
140,000 pounds coated book paper.
25,000 pounds lithograph paper.
2,900,000 pounds mimeograph paper.
400,000 pounds U S M O safety writing paper.
8,000 pounds U S M O writing paper.
25,000 pounds safety writing paper.
3,972,500 pounds writing paper.
435,000 pounds map paper.
618,000 pounds manifold paper.
3,460,000 pounds bond paper.
585,000 pounds ledger paper.
356,000 pounds index paper.
2,500 pounds tissue paper.
170,000 pounds cover paper.
200,000 pounds manila paper.
486,000 pounds kraft paper.
140,000 pounds manila tag board.
750,000 pounds calendered tag board.
30,000 pounds manila cardboard.
75,000 sheets railroad board.
290,000 pounds bristol board.
5,000,000 pounds United States postal card bristol board.
1,000 pounds paraffin paper.
150,000 sheets gummed paper.
112,000 pounds blotting paper.
3,000 pounds stereotype molding paper.
15,000 pounds oiled manila tympan paper.
4,000 pounds plate-wiping paper.
2,000 pounds back-lining paper, for case making.
15,000 pounds high finish red sulphite.
20,000 sheets pressboard.
2,000 pounds news board.
515,000 pounds chip and strawboard.
15,000 pounds marble grained board.
36,000 pounds box board.
340,000 pounds binders board.

In cases where more than 1,000 reams are called for, proposals will be received for 1,000 reams or more.

John P. Burke Discusses Code

[FROM OUR REGULAR CORRESPONDENT]

HUDSON FALLS, N. Y., July 30, 1934—A meeting of officials and representatives of the various labor unions of the Union Bag and Paper Corporation was held here this week at which the code governing the papermaking industry was discussed by John P. Burke, head of the International Brotherhood of Pulp, Sulphite and Paper Mill Workers. It was decided to await the revised code now being prepared before any action relative to new wages is made. The new code is expected to be ready in September and is said to call for a minimum scale of 42 cents an hour for men and 37 cents for women workers. The scale now in effect is said to call for 38 cents an hour for men and 33 cents for women. The meeting was orderly and a spirit of co-operation was shown between both factions. No difficulty is expected in placing the code in operation. Among those at the conference were Alexander Calder and John T. Gamble, president and general manager respectively of the company; Thomas Smith and John Lawlor, representing the papermakers' union; Julius J. Colvin and John Krause, of the pulp, sulphite workers and representatives from the machinists and carpenters union.

Announcement was also made here that T. M. Avery, superintendent of the company, has been granted a patent on a machine for manufacturing paper bags. The invention comprises a number of featureable claims all of which are allowed by the patent department. Application for patent was filed in 1932 and rights have been assigned to the Union Bag and Paper Corporation.

Birthday Party for Harry P. Gould

LYONS FALLS, N. Y., July 30, 1934—Friends and business associates of Harry P. Gould, president of the Gould Paper Company, tendered a birthday party to him this week at the summer camp owned by the concern. An elaborate dinner was enjoyed and Mr. Gould was the recipient of congratulatory messages from his many acquaintances.

Canadian Newsprint Paper Situation Analyzed

Prominent Observer Expresses View That Dominion Will Continue to be Main Source of Supply for United States—Declares Increase In Price of $5 Per Ton Necessary to Offset Higher Costs—Points Out That Wood Piles Are Nearing Depletion

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., July 30, 1934.—Commenting on the condition of the news print industry in Canada, a prominent financier in close touch with the situation states that it is probable that Canada will continue to be the main source of supply for United States consumers. At the same time United States publishers are kicking against any further increase in price of the Canadian product. That price is now $40, New York, which nets the typical Canadian manufacturer about $33 f. o. b. mill. It is said that an increase of another $5 is necessary to offset high costs under recent conditions. For one thing, company wood piles are rapidly nearing depletion and fresh cutting operations in the woods will be required on an extensive scale during the coming Winter. Improved prices for news print, as, if and when they result from the News Print Code, to which Canadian producers have been made a party, naturally would mean some appreciation in the prices for bonds and stocks of the Canadian companies. But even so, it would require a considerable number of years with steady consumption and firm or rising prices before adequate returns could be earned on the $800,000,000 which has been directly or indirectly invested in the industry in this country. This suggests that a series of capital reorganizations still are required to put the industry in a sound condition, but as yet there does not seem to be much convincing evidence that warring producers are willing to put their differences aside and co-operate in a manner likely to benefit investors.

B. C. Pulp Mills Work at Top Speed

The Orient will continue to be an important customer of the Canadian news print and pulp industries, according to Oscar Jorgenson, secretary of the British Columbia Pulp and Paper Company, who has just returned to Vancouver from a tour in Japan. He says that Japanese mill operators are endeavoring to utilize the forests of Manchukuo for pulpwood and that several mills have recently been established in the Japanese puppet state, but several years must elapse before these plants may be considered as a factor of importance. Meanwhile, all British Columbia pulp and paper mills continue to operate at full capacity. Powell River Company, it is understood, is taking steps to increase production to take care of steadily expanding markets. Heavy buying is reported from Shanghai and other Asiatic markets. Pacific Mills, subsidiary of Crown Zellerbach Corporation, is also sharing in the Oriental trade and other business. A. B. Martin, president, anticipates an early increase in the price of news print on the Coast. He said: "The reduction in revenue arising from the reduction in the price of news print paper June 1, 1933, of $5 a ton, bringing the sale price down to $40 a ton delivered at Pacific Coast ports—the lowest in twenty years, was offset by increased volume of sales and prices of our other products and by increased efficiency and economies in operation. Production costs, however, have now increased as a result of individual advances in the prices of materials and supplies and the restoration on May 1, 1934, of the scale of wages and salaries in effect prior to the general reduction in January, 1933. With these increased costs it is to be expected that operations will not be profitable so long as the price of news print remains at the present level."

Notes and Jottings of the Trade

Concerned over rumors that the new Hepburn Government planned drastic changes in the set-up and administration of the Workmen's Compensation Board, a deputation of prominent employers met with Attorney General Arthur W. Roebuck at Queen's Park, Toronto. The delegation will draft certain recommendations and these will be checked with what the Government has in mind in regard to the matter. D. B. Chant, secretary-engineer of the Ontario Pulp and Paper Manufacturers' Association, represented the pulp and paper industry of the province.

S. F. Duncan, president of Provincial Paper, Ltd., has returned to the head office in Toronto after a visit of inspection to the Port Arthur mill of the company.

Norman E. Wainwright, head of the Don Valley Paper Mills, Toronto, is spending a few weeks' holiday in eastern Canada along the shore of the St. Lawrence River.

Beverley Macguire, assistant sales manager of Provincial Paper, Ltd., is spending his vacation in the Sudbury district.

A provincial charter has been granted to Premier Pulp and Paper Corporation, with headquarters at Chandler, Que., and an authorized capital of $100,000. Among the incorporators of the company are Francis G. Bush, a well-known paper manufacturer; Herbert W. Jackson, accountant, and Joseph T. Harrington, secretary.

The new Ontario Hydro-Electric Power Commission has given approval for a contract to supply 2,400 horsepower to the Howard Smith Paper Mills at Cornwall, Ont., at the rate of $12 per h.p. for five years. The agreement is concurrent with one with the company for firm power recently entered into under which the commission provides 5,000 h.p. at the rate of $20 per h.p. The new supply is to be made available August 1.

Florida Protests

In a recent issue the *Tribune* of Tampa, Fla., says: "The fight being made by northern pulp interests on the proposal to establish a large wood pulp plant at Fernandina has aroused much resentment throughout the state. It is regarded as the outgrowth of selfish antagonism to the development of this industry in the South—a development promised through the discovery of the processes whereby both news print and other paper can be produced from southern pine.

"Governor Sholtz has wired vigorous protest to the Board of Review of the PWA, which is hearing the Florida application and the objections of the American Pulp Paper Association.

"While that 'federal authority must maintain national interests above those of any single state,' the Governor insists that 'to penalize this state and block the marketing of its great natural resources for supposed benefit of foreign countries whose product enters without tariff duties is unstable, unsound, subversive to economic justice and monopolistic in extreme.'"

Wisconsin Paper Mills Increase Workers' Wages

Consolidated Water Power & Paper Co. Announces Raise of 7½ Per Cent and Nekoosa-Edwards Paper Co. of 5 Per Cent—New Policy Benefits Approximately 2,500 Employees—John E. Alexander Looks For Greater Activity and More Stable Employment

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., July 30, 1934—Wage increases of 7½ per cent by the Consolidated Water Power and Paper Company, and of 5 per cent by the Nekoosa-Edwards Paper Company were announced last week. The new policy affects a total of approximately 2,500 employees in the two organizations.

Consolidated schedules cover the mills at Wisconsin Rapids, Biron, Stevens Point and Appleton, Wis., and went into effect with the work week beginning July 23. This is the third increase made by the company since a year ago.

Completing negotiations of its seventeenth annual labor agreement with the various union organizations of which the employees are members, the Consolidated announced that the common labor base will be 43 cents per hour minimum for all male workers. Women are to be paid 35 and 37 cents per hour. This increase is approximately the same as increases made recently throughout all union paper and pulp mills in the United States and Canada. The new contract makes no material changes in working conditions.

Unions represented in the negotiations were the pulp and sulphite workers, paper makers, electricians and machinists. They were represented by ex-Congressman George J. Schneider, W. F. Roggie and Raymond A. Richards. Company representatives were Stanton W. Mead, C. E. Jackson, L. J. Barrett, J. B. Purves and C. K. Boyer. The opening session also was attended by George W. Mead, president of the company. Other union officials and committee members from the locals also were present.

The increase of five per cent at the Nekoosa-Edwards company was given voluntarily, according to John E. Alexander, vice president and general manager. It takes effect August 1 and brings the common labor base from 38½ cents to 40 cents, on a 40-hour week working schedule. The code base is 38 cents.

When making the wage announcement, Mr. Alexander declared that he felt safe in predicting the second half of this year would see a greater demand for the company's lines, and that employment would be more stable than during the first half. Conditions in the paper industry are somewhat improved generally, he said. Production at the Nekoosa, Wis., mill has run ahead of the Port Edwards, Wis., mill, due to the stabilized condition of the kraft industry, which has not been equalled by the sulphite grades. It is expected the second half of the year will show a greater stability in the finer grades, which should create increased hours for the Port Edwards mill.

Mosinee Workers Form Company Union

Organization of a labor union not to be connected with the American Federation of Labor is in progress among employees of the Mosinee Paper Mills Company, Mosinee, Wis. Out-of-town labor organizers held a number of meetings, some of which were attended by as many as 1,500 employees, in an attempt to organize under the A. F. L. When a vote was taken among the workers, they gave decisive support to their own union, with a negotiating committee elected by employees of each department. The company indicated its desire to co-operate with its workers in any organization move they decided to make.

News of the Industry

Wisconsin paper mills have begun contributing a specified percentage of their pay rolls monthly into a state unemployment reserve fund. They are doing this in compliance with the unemployment insurance law placed in effect July 1, 1934, by the Wisconsin legislature. Contributions will be made regularly until the reserve for each mill is built up to a point where it will take care of the maximum payments to workers when they are laid off during slack periods. Contributions will then cease until the reserves have been utilized for payments. The funds are invested as trust funds by the State of Wisconsin. Deposits are graduated from two per cent of the total pay roll down, according to the reserve established per employee.

Ten thousand cords of spruce from Magnet Point, Canada, have been received by the Consolidated Water Power and Paper Company at its rail loading hoist at Ashland, Wis. The wood was brought across Lake Superior by raft towed by the company's tug *Butterfield*. This is the fourth raft brought across successfully. Fifty men are now employed on the hoist in two shifts to reload the wood on cars for the Consolidated mills.

A wood pulp cargo from Norway is expected to dock at Milwaukee, Wis., this week. It was brought by the steamer *Sisto* for reconsignment to Wisconsin mills.

Movement of coal from the docks at Green Bav, Wis., to Wisconsin mills via barge has been suspended for about a week while an abandoned lock at Rapid Croche, on the Fox river below Kaukauna, Wis., is being removed by a government crew. A new lock was completed this spring. Two dredges will widen the channel after the old lock is removed.

The foundation has been completed on the center section of the new dam near the Interlake Pulp and Paper Company mill on the Fox river at Appleton, Wis. Two of the five piers for the new gates are in place, and the gates are being assembled for installation. Pouring of concrete on the new spillway also has been started. C. R. Meyer & Sons Company of Oshkosh, Wis., is doing the work.

Paper Makers Directory of All Nations

The 1934 edition of the Paper Makers' Directory of All Nations has just been issued. It is bound in cloth and contains over 1,000 pages. The price is 21 shillings net.

The international character of this Red Book of the Paper Industry (now in its 43d annual issue), renders it of particular interest to all those who are in any way connected, or have business relations, with the paper and allied trades, while the alphabetical nature of its arrangement makes it particularly easy of reference. From the Prefactory Note and Contents pages may be gathered the detailed particulars furnished by the Directory in its various sections.

It is published by Dean & Son, Ltd., 6, La Belle Sauvage, Ludgate Hill, London, E. C. 4.

Boston Paper Market Only Moderately Active

Restricted Demand for Various Standard Grades of Paper Due to Seasonal Causes—Volume of Orders for Kraft Wrapping Paper and Summer Specialties Slightly Greater—Paper Board Quotations Decline—Waste Paper Prices Generally Firmer

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., July 30, 1934—From quiet to fair was the general run of business in the wholesale paper industry of Boston and vicinity during last week. Those who report a slow demand say that it is no worse than it was a year ago this Summer. An exceptional case is noted in a fine paper house, at which it was stated that business was pretty good. There was a little more activity in some quarters in wrapping paper lines since the hot wave was broken. In kraft the volume of orders during the last half of July was larger than during the first half. It is expected that the demand for standard lines will be much better in August. The call for specialties for resort and roadside stand purposes is well sustained.

A drop in prices of the majority of the grades of box board went into effect on Thursday, in most cases a decline of $5.00 per ton; in a few, $2.50, $7.50 and $10.00. For some time there have been reports of lower prices in New York than were current in Boston. Filled news board has declined to $40.00 @ $45.00 against a former quotation of $45 @ $50.00. Chip board has dropped to $37.50 @ $40.00, against $42.50 @ $47.00, one house ordering a quantity at $37.50. Chip board for creasing went to $37.50 @ $40.00, against $45.00; single manila lined chip to $47.50 @ 52.50, compared with $52.50 @ $62.50. Single white, patent coated news board, bender, went to $57.50 @ $65.00, although it is rumored that the minimum price will soon be up to $60.00 again. One mill, in fact, quoted as high as $67.50.

There was a very good demand for some grades of paper stock, although the majority continued quiet. An excellent call prevailed for corrugated boxes and old newspapers. Overissue news and old newspapers were strong at .45 @ .50 and .30 @ .35, respectively. A little demand developed for white blank news, which rose to .95 @ 1.05 from a former quotation of .90 @ 1.00.

Cotton twine remained generally at the same levels. The expected further advance in polished twine has not yet taken place.

News of the Trade

A meeting of the Fine Paper Division of the New England Paper Merchants Association is to be held July 31, at which direct mill sales on blotting, envelope code schedules, and bidding on governmental agency inquires will be discussed.

Carter, Rice & Co. Corp. have added to their warehouse stock Glenbourn Deckle Edge Book, one of the Hurlbut papers, rag content, a moderately priced grade with an exceptional printing surface, made in a soft-tone white and mellow ivory. Sample books are being distributed.

William C. Ross, assistant treasurer and sales manager of the Fort Hill Paper Company, has returned from a vacation, during which he has been motoring through Maine.

William W. Newton, manager of the Boston office of the Newton Paper Company, Holyoke, Mass., went to Nova Scotia for the week-end on a combined business and pleasure trip.

Robert H. Welsh, merchandise manager of the white paper department of Carter, Rice & Co. Corp., left Saturday for a two weeks' vacation.

Ralph Day, salesman with headquarters at the New England office of the American Writing Paper Company, is passing a two weeks' vacation at Swampscott, Mass.

Thomas Daly, veteran salesman for John Carter & Co., Inc., is passing an extended vacation at Winthrop, Mass.

W. L. Goodwyn, vice-president of the Standard Paper Manufacturing Company, Richmond, Va., and A. P. Mitchell, a representative of the New York office of the Riegel Paper Corporation, of Milford and Riegelsville, N. J., called on the trade last week.

Indianapolis Demand Quiet

INDIANAPOLIS, Ind., July 30, 1934.—With the exception of summer specialties, the paper trade here was indifferent during the last week. Extreme temperatures were largely responsible. In many plants, hours were cut because of weather, print shops were partly closed and the rest of the general public did just as little as possible. Fans were uppermost in their minds, not buying. The last of the week some relief was seen, but it came too late to influence the trade much.

The general undertone of the market, however, is good. The entire trade is looking forward to the fall season with considerable optimism. With the opening of the fall season, the fine paper field is expected to show considerable increase.

While demand for news print has been fairly good, even during the hot weather, the fall season is certain to show still further gains. The lineage in Indiana papers this year thus far is decidedly ahead of the same period a year ago and there is nothing to indicate that this proportionate increase will not be carried through the fall and winter season. In fact, many paper executives are confident the last of the year will show still further gains.

Summer specialties, of course, have increased in demand during the past two weeks. The volume this year will be far beyond that of last in virtually every item, due to abnormal temperatures during the entire summer. Starting early in June the demand rose to unprecedented heights for that time of the year and the level has been maintained consistently week after week. Container men also report a fine business and most of the factories will speed production if permitted by weather in order to prepare for the fall season.

Paper stock men report a light demand just now, particularly for domestic and new cotton rags. Paper stock is about the same, but prices are unchanged.

N. S. Meese Joins Paper Division

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., August 1, 1934.—Norman S. Meese, who was chief of the Paper Division of the Department of Commerce for a number of years and who has lately been connected with the AAA, working on the paper processing taxes, has joined the staff of the Paper Division of the United States Tariff Commission under Franklin H. Smith. During his paper work Mr. Meese has made some good friends in the industry, all of whom will wish him well in his new work.

Philadelphia Paper Market Looks For Upswing

Opinion Expressed That Improvement Will Begin In Late August, Despite Many Contrary and Uncertain Factors—Paper Stock Market Becoming More Buoyant, With Folded News and Mixed Paper Moving In Greater Volume and Prices Firmer

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., July 30, 1934—There are indications that the more-than-seasonal slump that has affected business in the paper trade here for the past six or eight weeks will not go any deeper. It is more than likely that the upswing, which was not expected before late September, may get under way in late August. Whether it will assume anything more than seasonal proportions is a matter of pure speculation, for there are many contrary and uncertain factors to be reckoned with.

Encouraging indeed are reports telling of some increase in the movement of news and mixed paper into consuming mill channels this week. Inquiry has shown a fair pick-up, members of the trade here state, and it is evident that the reason board manufacturers are taking larger tonnage is that they have use for more raw materials. The situation in prices of news and mixed paper has reached a point where it can be said the tone is definitely firm. These grades have reached a price level below which brokers candidly admit it is difficult to buy from packers, and it would seem all that is needed to send the market higher is for consuming demand to expand a little further.

Set-Up Paper Box Code Meeting

A meeting of the Code Authority of the Set-Up Paper Box Manufacturing Industry was held during the month at the headquarters, 1400 Liberty Trust Building, at which the following members of the Code Authority were present: William P. Datz, Jr., chairman; D. H. Dillard; John A. Garvey; R. H. Ritchie; Walter E. Trum; Francis C. Lowthrop, assistant deputy administrator; Charles P. Light, administration member of the Code Authority; Solomon Barkin, member of the Labor Advisory Board of NRA; Howard P. Beckett, executive secretary, and B. W. Powers, from the State Director's Office.

Chairman Datz reported the activities of the Code Authority, emphasizing the necessity for greater Governmental cooperation in the enforcement of Code provisions. He stated that failure to bring cases to a conclusion encouraged violators in the belief that no effective steps were being taken by the Government to enforce compliance. He reviewed several cases which had come before the Code Authority and stated that they should be finally disposed of, either by prosecution or such other legal action as was warranted. He reported that investigators of the Federal Trade Commission had made investigations in connection with certain complaints, and that State Directors were cooperating to obtain enforcement and that the attitude of the NRA seemed to indicate more vigorous enforcement.

Executive Secretary Beckett reported that he had received information that certain firms were cutting wages and that some plants had put all workers on the basis of the minimum wages provided by the Code. Mr. Powers, from the State Director's office, stated that the State Director would see that equitable adjustments were made and the cases were referred to the State Director.

Assistant Deputy Lowthrop made a detailed report, submitting to the Code Authority formal application for official authorization to handle complaints. It was unanimously agreed to execute the application as submitted. Mr. Lowthrop stated that the method of administration and handling of complaints had been changed and that complaints should now be sent by either members or the Code Council to the State Director's office of the State having jurisdiction, sending copies of such complaints to the Code Authority. The reason for such procedure is based upon the fact that the NRA at Washington requires a report from the State Director with recommendations. Consequently, when complaints are referred directly to Washington, under present procedure, they go back to the State Director's office for recommendations. Sending complaints to the State Director's office, therefore, saves time and it is designed to speed up enforcement.

Another significant question was brought to the attention of the Code Authority by Executive Secretary Beckett, and that was the fact that the Folding Code Authority claimed jurisdiction of Brightwood Boxes. After careful consideration by the Authority, a resolution was adopted to the effect that the Administrator be advised that the Brightwood boxes fell within the definition of set-up boxes and had been regarded by the set-up paper box manufacturing industry and the users of boxes as a set-up paper box and that a communication setting forth the above facts be directed to the Administrator.

Recommendations were made that members of the industry deal only with those complying with their Codes, and also that members of the industry ask their suppliers for the number of the Code Eagle of such supplier.

Dual Cost Accounting Discussed

At a meeting of the coarse division of the Philadelphia Paper Trade Association, W. H. Kilhour, Jr., chairman, presided. He advised all those attending—and there was one hundred per cent representation—to study the new cost booklets being put out by the National Association and the Code Authority on uniform cost accounting. The intricacies of dual cost accounting were discussed, as was also the "green" book. It was agreed to put forth concerted effort in order to keep each other posted on market conditions as regards costs. The meeting assumed the aspect of a symposium in which all participated in very frank discussions of conditions as they relate to the coarse paper industry.

News of the Trade

W. H. Kilhour, Jr., president, Quaker City Paper Company, is planning a 5-day fishing trip at Beach Haven during the middle of August.

R. S. Reed, secretary, Quaker City Paper Company, is at present on a fishing trip at Pleasant Mountain, Pa.

Norman W. Fort, head of Thos. W. Price Paper Company, is spending the summer months at Bay Head, N. J.

The regular monthly meeting of the Sub Committee, William S. Wilcox, chairman, will be held at the headquarters of the Philadelphia Paper Trade Association in Drexel Building, the early part of next week.

Harry Goldman, president of the Goldman Paper and Paper Stock Company, N. W. corner 3rd and Wood streets, sailed on the *Ile De France*, on July 7, for a tour through European countries. He has planned short stopovers in France, England, Switzerland, Finland and Russia, expecting to return the early part of September.

TAPPI Fall Meeting Program Growing

What will probably be the most elaborate convention ever held in the pulp and paper industry is now in preparation in the Pacific Northwest. Because of the large attendance expected from the United States, Canada, Mexico, Japan, China and European countries it has been designated as the TAPPI International Convention and will be held in Portland, Oregon, from September 10 to 13, 1934. Headquarters will be located at the Multnomah Hotel. Room reservations should be made without delay since there are but few left.

It is expected that there will be two special trains to transport Eastern members and their friends from Chicago to Portland. The trains will be identical in every respect and will be specially equipped to meet the needs of TAPPI. Reservations on the train should be made with G. S. Brazeau, Weyerhaeuser Timber Company, Pulp Division, Chairman of Transportation, 307 N. Michigan Boulevard, Chicago, Illinois. Round trip fares from Chicago will be about $86 and for pullman $35.

Papers to be Presented

Although the program is not complete it is rapidly shaping up and will be up to the well known TAPPI standard of excellence, which is the highest of any industrial society.

"Forest Supplies of the Northwest of Interest to the Pulp and Paper Industry," is the subject of Thornton T. Munger, director of the Pacific Northwest Forest Experiment Station. Dr. Munger is long experienced in problems of forest work of the Pacific Northwest and will acquaint Easterners with information concerning the species size, quantities, geographical location and availability of various kinds of timber.

"Paper Machine Drier Control," by B. W. Sawyer of the Foxboro Company who made a comprehensive study of controlling drier temperatures.

"A Study of the Nature of Coloring Matter in Kraft Pulps," by Walter Holzer of the Crown Willamette Paper Company, Camas, Wash. This paper is based on the studies made by the author at the Institute of Paper Chemistry.

"Heat Transmission in the Paper Drying Processes," by C. S. Keevil, Department of Chemistry, Oregon State College.

"System CaO-SO_2-H_2O" by W. L. Beuschlein, Chemical Engineering Department, University of Washington.

"Motor Control Equipment of the Cubicle Type for 440-2200 Volt Operations," by K. L. Howe, Westinghouse Electric and Manufacturing Company, Seattle, Wash. This relates to a new development of interest to mechanical and electrical engineers.

"The Texas Gulf Sulphur Company Spray Type Sulphur Burner," by Otto Kress, W. H. Swanson, D. C. Porter, and B. F. Smith. This paper will deal with experiences with this new burner in a Wisconsin mill.

"Electricity and Production in the Paper Industry," by W. F. Hynes, General Electric Company, Portland, Ore.

"Pulp Specifications," by H. U. Kiely, American Writing Paper Company, Holyoke, Mass. This subject has become extremely important in formulating trade practices under the paper mill code.

"Influence of pH on the Absorption of Dyes by Cellulose and Fillers," by Leo Freedman, Department of Chemistry, Oregon State College.

"The Pulping of Douglas Firs in Ammonium Bisulphite Solutions," by H. K. Benson, Department of Chemistry, University of Washington.

"Increasing the Usefulness of Less Expensive Fibers with Zinc Sulphide Pigments," by F. A. Steele, New Jersey Zinc Company.

"Power Potentialities in the Pacific Northwest," by R. A. Dodson, Portland, Ore.

"History and Biography in the Paper Industry," by R. M. Snell, Hurlbut Paper Company, Lee, Mass.

Woods Operations

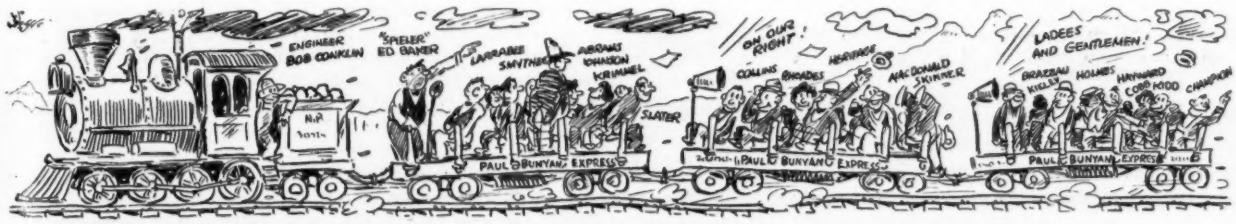
An outstanding feature of the meeting will be the trip on the Paul Bunyan Express from Longview, Wash., up into the big timber where the most advanced methods of logging will be demonstrated. Members will ride on flat cars and will have a chance to see every important woods operations.

Longview itself, is one of the wonders of the Pacific Northwest, a wilderness twelve years ago and today a model city. An opportunity will be provided to visit the famous saw mills of the Long-Bell Lumber Company and the Weyerhaeuser Timber Company. In the woods there will be a real lumberjack picnic which will be worth the trip to the Coast.

Plants to Receive Visitors

The following paper and pulp plants in the Northwest will hospitably receive visitors during and after the TAPPI convention:

Inland Empire Paper Company—Spokane, Wash.
Oregon Pulp and Paper Co.—Salem, Ore.
Crown Willamette Paper Co.—Camas, Wash.
Columbia River Paper Mills—Vancouver, Wash.
Everett Pulp & Paper Company—Everett, Wash.
Soundview Pulp Company—Everett, Wash.
Pacific Coast Paper Mills—Bellingham, Wash.
Puget Sound Pulp & Timber Co.—Bellingham, Wash.
National Paper Products Co.—Port Townsend, Wash.
Shaffer Box Company—Tacoma, Wash.
St. Regis Kraft Company—Tacoma, Wash.



TO THE TALL TIMBER—The "Paul Bunyan Express" from Longview to Mt. St. Helens for T. A. P. P. I. Convention-goers. Lumberjack Picnic—Great Lumbering Operations—Tree-Topping Thrills.

Olympic Forest Products Co.—Port Angeles, Wash.
Washington Pulp & Paper Co.—Port Angeles, Wash.
Rainier Pulp & Paper Co.—Shelton, Wash.
Longview Fibre Company—Longview, Wash.
St. Helens Pulp & Paper Co.—St. Helens, Wash.
Newberg, Oregon—Spaulding Pulp and Paper Company. —Newberg, Ore.
Crown Willamette Paper Co.—Oregon City, Ore.
Hawley Pulp & Paper Company—Oregon City, Ore.
Grays Harbor Corporation, and Grays Harbor Pulp and Paper Co.—Aberdeen, Wash.
Weyerhaeuser Timber Co.—Longview, Wash.
Longview Fiber Company.—Longview, Wash.

Special Trains

Two special trains have been set up for operation to the TAPPI Convention on the following schedule:

SEPTEMBER 5

Lv. Chicago—New Union Station, via C. B. & Q. Ry ..... 10:30 P.M.
How do you like the lounge car, the diners, the sleepers in our TAPPI club on wheels?

SEPTEMBER 6

Lv. St. Paul—Union Station, via N. P. Ry 8:15 A.M.
Over the Mississippi—"U. of M." on the right, flour mills left and right.

Lv. Minneapolis—Hennepin Avenue Station, via N. P. Ry ..... 8:45 A.M.
10,000 lakes—count 'em—we will not get dizzy over it, but will see plenty of lakes and a few typical Minnesota forest landscapes. Then across the Red River of the North into North Dakota. after a welcome by the Sioux, ceremonial dancing and entertainment at Mandan, the trains head straight west.

Lv. Mandan—Northern Pacific Depot ..... 6:15 P.M.
The weirdest time of night to cross the Bad Lands is at sundown—eerie, spectacular—this cattle range of the North, which Theodore Roosevelt loved so well and where he lived as a young rancher.

SEPTEMBER 7

Ar. Gardiner, Montana ..... 9:00 A.M.
Yellowstone Park—wonderful! Mammoth Hot Springs, Three Geyser Basins, Old Faithful, Grand Canyon. Board parked sleepers late at night and move to Livingston, Montana, gateway to one of the most magnificent mountain areas in all the world.

SEPTEMBER 8

Lv. Livingston, Montana—N. P. Ry ..... 6:00 A.M.
Through American Rockies all day—the best Montana and Idaho have to offer.

Ar. Spokane, Washington ..... 6:30 P.M.
Dinner-dance at Davenport Hotel, one of America's most distinguished.

Lv. Spokane—Northern Pacific Depot ... 11:30 P.M.
Along the Columbia River

SEPTEMBER 9

Ar. Portland, Oregon—S. P. & S. Ry ... 10:00 A.M.

Portland Ready

Portland is making extensive plans for entertainment. Such a country for it. Have you read the National Geographic magazine for March? If so, you know a little about Oregon's amazing attractions. Come with TAPPI to Portland and you will know much more and like it.

The convention itself will be an outstanding one in the history of the Association, with a program of inspiring, informing, worthwhile messages. But in addition to the customary program events, there will be extraordinary sightseeing and the inspection of the Pacific Northwest's greatest industry—forest products.

Electrification Saves $45,000 Annually

Annual savings of $45,000 are expected by the American Box Board Company, Grand Rapids, Michigan, following the replacement of four small turbines and three steam engines with a new 3000 Kw Westinghouse unit, at its No. 1 Mill. Also, by installing high speed squirrel cage gear motors rather than low speed slip ring motors the plant power factor will be maintained at higher than 80 per cent. The plant is expected to be in complete operation by September 4.

A few months ago the American Box Board Company carefully analyzed their steam consumption for electrical generation of power and the possible savings of using electric drives for its second mill, the first having been electrified in 1914. Fortunately, complete records of the total number of kilowatt hours generated for each operation and the total steam used for heating buildings and drying paper were available. At present four turbines are used: one 600 Kw non-condensing turbine; one 550 Kw bleeder turbine; one 300 Kw bleeder turbine; and one 600 Kw bleeder turbine. The total plant load is approximately 1700 Kw.

The investigation brought out very clearly that by electrifying what is known as Mill No. 1, and by installing a 3000 Kw turbine unit, that an annual saving is based on both the 1932 and 1933 plant operations.

Each of four Jordans is to be equipped with a 100 hp. 1725 to 435 R.P.M. gearmotor; and each of five beaters is to be equipped with a 60 hp. 1160 to 235 R.P.M. gear motor.

The plant is expected to be in complete operation just before the heating season begins; this fall and three years later it is expected that the equipment will have completely paid for itself from savings in plant operation.

Paper Distributing Trade Budget Submitted

The Code Authority for the Paper Distributing Trade has submitted to the National Recovery Administration approval, a budget of $125,212 for the period from January 1, 1934, to December 31, 1935.

The basis of contribution is: "An assessment levied on a dual basis in the amount of thirty cents per one thousand dollars of sales, plus three dollars per employe."

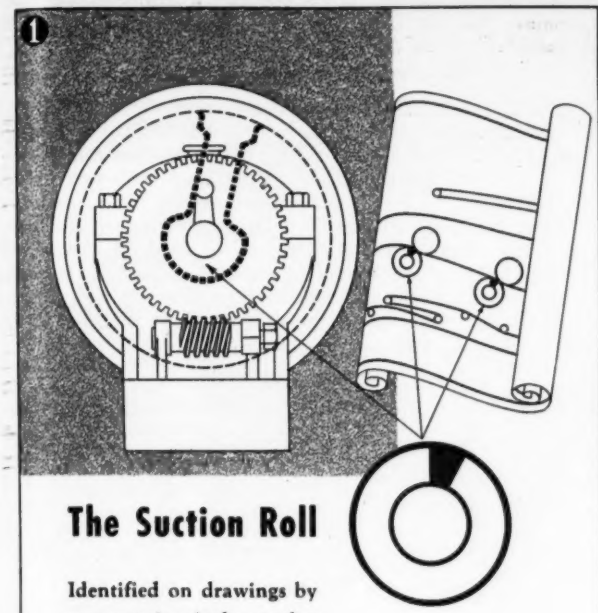
The budget includes $20,000 for executive salaries; $20,212.20 for other salaries; $29,750 for office expenses; $18,500 for traveling and Code Authority meetings expenses and $36,750 for miscellaneous.

The Code Authority has also applied for termination of the exemption of Administrative Order X-36 whereby a member of a trade or industry has no obligation to contribute to expense of code administration of any code except the one covering his principal business.

Notice was given that criticisms, objections or suggestions concerning the above must be submitted to Deputy Administrator David H. Tulley, Room 209, National Savings and Trust Building, Washington, prior to August 4, 1934.

DOWNINGTOWN

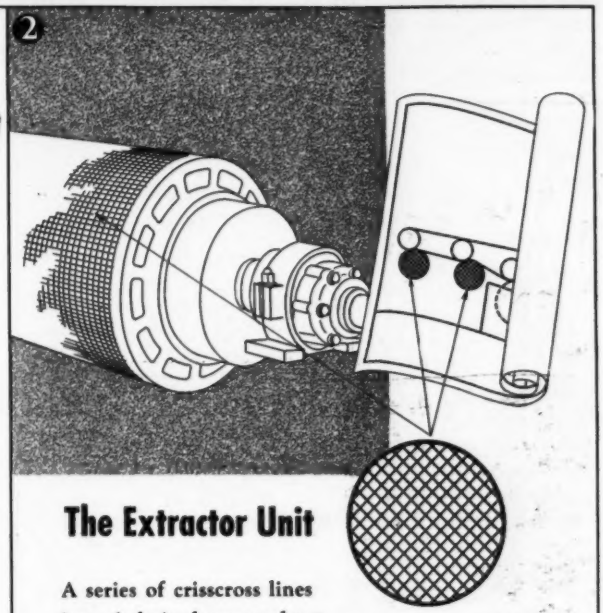
1



The Suction Roll

Identified on drawings by concentric circles and a black notch, the outer circle representing the drilled face of the Downingtown Suction Roll while the inner circle and notch denote the suction box.

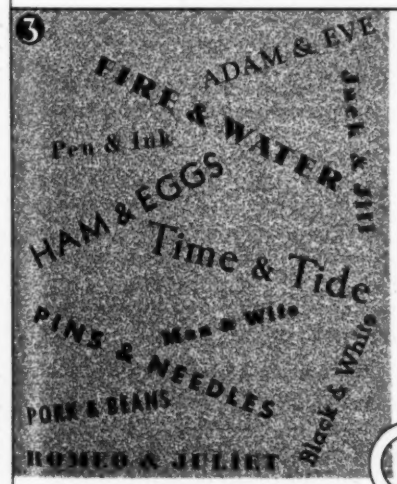
2



The Extractor Unit

A series of crisscross lines in a circle is always used to indicate where the Downingtown Extractor Unit is placed in the machine. The lines suggest the wire face on the bottom roll of the Extractor Unit.

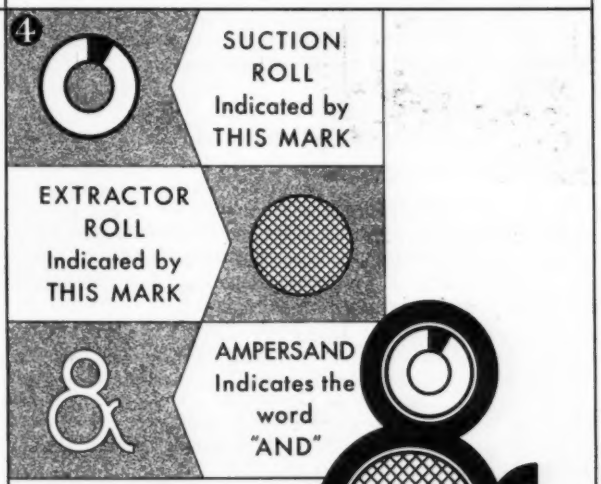
3



The Ampersand

This mark, indicating the word "and" is most frequently used with natural or famous combinations or where two objects or subjects cannot have the same meaning or perfection, without being together.

4



The Trade Mark

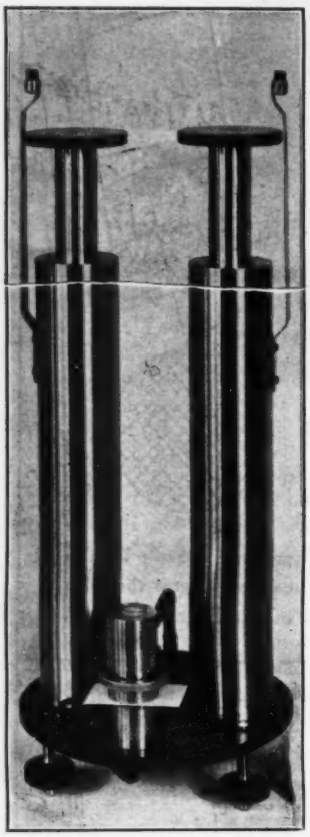
Identifying the Downingtown Duo-Dehydrating Press Part is thus a combination of these three marks. Water is safely removed by both Extraction and Suction. The Downingtown Manufacturing Co., Downingtown, Pa.

The GENEALOGY of a TRADE MARK

New Gurley Smoothness Tester

The Gurley No. 4160 R. D. Smoothness Tester was developed to permit a mechanical measurement of the smoothness of paper. The unit of measurement is the surface-porosity, or the rate at which air flows through the inequalities in the surface of the paper.

It is important that this be distinguished from "gloss," which is defined as the optical characteristic of paper surfaces in the sense of diffusely or specularly reflected light.



Description

The R. D. smoothness tester consists essentially of two circular blocks, having a cross-sectional contact area of 1 square inch. The contact surface of each is lapped and polished optically flat, and the sample is placed between the two surfaces.

The paper is subjected to a pressure of one-half pound weight by the top block. It is also centrally subjected to an air pressure of 12 inches of water, equal on both sides of the paper.

Air then passes outward between the paper and the test block, due to the inequalities of the sheet. A measurement of the time (in seconds) for a 5-cc. air flow is taken as a measure of the inequalities of the sample, and indicates the "finish."

The means for developing air pressure at the sample held between the two polished surfaces consists of two identical cylinders, containing mercury, in which are floated two cylindrical cups, having the top ends closed. They develop equal air pressures and automatically maintain it practically constant throughout the period of the test. The inner cylinders have 5-cc. graduations, so that the time may be measured for known air flows.

Method of Operation

The two inner cylinders are raised, and are held in the raised position by means of catches which engage them under their rims.

The sample of paper is then placed between the blocks, the top block resting concentrically over the bottom one.

The inner cylinders are then released, developing equal air pressures on both sides of the sample. The graduations on the inner cylinders are timed as they pass the top surface of the outer cylinders. Thus, the time for the passage of a known quantity of air is measured. The time becomes greater as the finish is higher.

Average results from individual tests on ten samples should be obtained for the specific grade of paper under test. Constant humidity conditions are preferable.

Analogous results are obtainable on duplicate instruments. The construction of the instrument is precision work, with the block surfaces tested against a perfect surface, such as an optical flat, and then against each other to show no air leakage. The cylinders must also be identical, both in diameter and weight.

Importance of the Smoothness Test

The smoothness test is important from the standpoint of an evaluation of quality production, particularly for printing papers. It concerns itself with the mechanical perfection of the paper surface rather than with any optical characteristic.

It bears no specific relation to other tests on the same sample, such as density, gloss, caliper, and oil absorption. A large number of tests indicates some relationship between these properties, such as the surface porosity and density, but one is not convertible into the other on account of the many factors affecting each property.

Examples of Tests

The following are actual tests on a number of samples:

Grade of paper	Surface porosity Air flow—Seconds per 5 cc. Wire side	Felt side
Kraft (open formation)	13	18
News print	35	42
News print	70	77
News print	152	173
Rotogravure	100	125
Catalogue	65	76
Magazine	302	348

Advantages

The following advantages are secured by means of this instrument:

1. Both the wire and felt sides are measured at the same time.
2. Low unit pressure is applied to the sample, thus causing no change in its finish.
3. Portability.
4. Ease and simplicity of operation.
5. Short testing period.
6. Simplicity of design and construction.
7. Analogous results are obtainable on duplicate instruments.

Specifications

Height: 12¾ inches; extended, 16¾ inches.

Diameter of base: 6½ inches.

Two leveling screws, together with a small circular spirit level, which is mounted on the base, serve for leveling the instrument.

The necessary amount of mercury is sent with the instrument, in two bottles, each bottle containing the mercury for one cylinder.

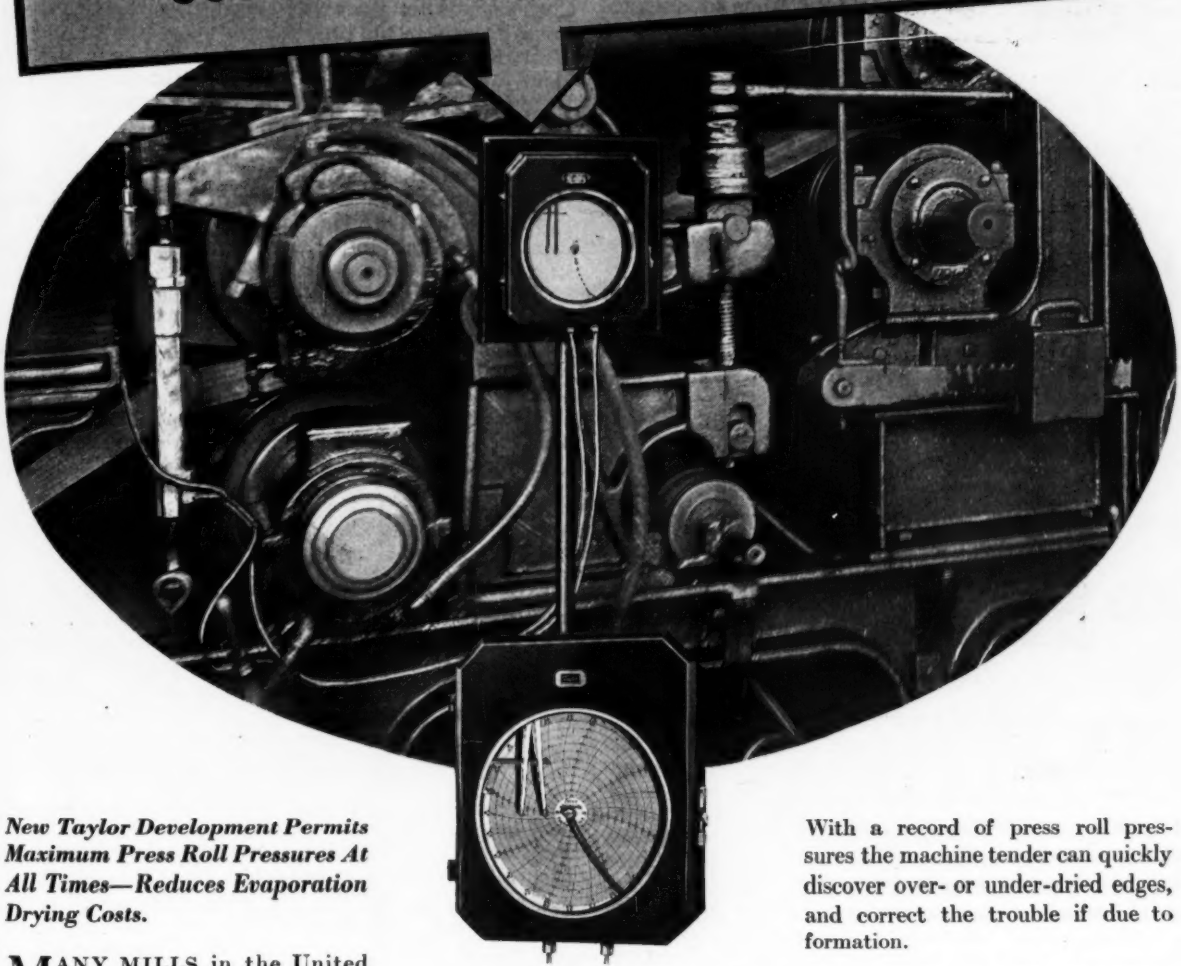
Stainless steel is used for the cylinders and the races of the ball bearings which guide the inner cylinders.

Algonquin Paper Co. Gets Pulpwood

[FROM OUR REGULAR CORRESPONDENT]

OGDENSBURG, N. Y., July 30, 1934—A large shipment of pulpwood arrived here this week from Quebec for the Algonquin Paper Company which maintains an extensive timber tract in Canada. The vessel carried several hundred tons. The mill has contracted with publications controlled by Frank Gannett to take its output and it is expected that after September 1 this business will allow the plant capacity operations continuously. F. A. Augsbury, president of the company, will return next week from a vacation spent at Mont Louis, Canada, where he has business interests.

FOLLOW THE ARROW TO LOWER DRYING COSTS . . . HIGHER STOCK QUALITY



New Taylor Development Permits Maximum Press Roll Pressures At All Times—Reduces Evaporation Drying Costs.

MANY MILLS in the United States and Canada are profiting from the installation of Taylor Pulp Grinder Control and more recently, Taylor Sulphite Digester Control. Now, with the development of the Taylor Press Roll Load Recorder, they can cut costs, increase operating efficiency and improve the quality of their paper still further.

For this latest Taylor engineering achievement, by providing an accurate, day-by-day written record of press roll pressures, enables operators to maintain more uniform presses across the entire width of the sheet and to carry *maximum permissible pressures.*

This means lower paper drying costs because it assures maximum reduction of water content. Studies show that when it is necessary to remove water by evaporation it costs *ten times* as much!

New and immediate savings with this TAYLOR PRESS ROLL LOAD RECORDER that charts a record of pressures at both ends of a press roll—provides an absolute check on the operation of each press during the entire 24 hours. *This method of measuring and adjusting press roll pressures is covered by patents and patent applications.*

Felt costs are reduced because uneven frictional wear is minimized. And since the uniformness of the pressing operation has an important bearing on tensile strength, shrinkage and density, these characteristics of your product are improved accordingly.

With a record of press roll pressures the machine tender can quickly discover over- or under-dried edges, and correct the trouble if due to formation.

More Savings For You

Taylor Press Roll Load Recorder advantages have been proved in two years of actual service in the field. On the average operation it brings savings that pay the cost of its installation in a few months' time. Let us give you more facts. Address Taylor Instrument Companies, Rochester, N.Y., or Toronto, Canada.

Taylor

Indicating Recording • Controlling

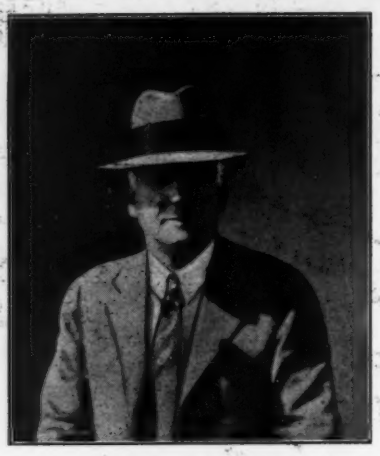
TEMPERATURE *and* PRESSURE INSTRUMENTS

Obituary

Albert A. Tanyane

Albert A. Tanyane, general advertising manager of the Lockwood Trade Journal Company, Inc., publishers of the PAPER TRADE JOURNAL and *Lockwood's Directory of the Paper and Allied Trades,* died Wednesday evening, July 25, at the Bowne Memorial Hospital, Poughkeepsie, N. Y., after a protracted illness from a complication of diseases. Mr. Tanyane made his home in New York at the Hotel Wellington, Seventh Avenue and 55th street.

Mr. Tanyane was born October 8, 1872, at New Haven, Conn. He attended the public schools of New Haven and entered Yale University in the class of 1895, but did not remain to complete the course. After leaving college he immediately became connected with the publishing business, going, after a brief experience in New Haven, to the *Evening Post* of Worcester, Mass., of which he became business manager. Later he went to Boston and was connected among other publications with the *Boston Herald.*



ALBERT A. TANYANE

In 1909 Mr. Tanyane became the New England advertising manager of the Lockwood Trade Journal Company, with headquarters in Boston. He retained this position until 1915, when he was called to New York to become general advertising manager of the Lockwood Trade Journal Company. Mr. Tanyane was married to Hattie Burlingame, who is his sole surviving relative.

The funeral services were held at 11 A. M. Saturday morning, July 28, at the Universal Funeral Chapel, 597 Lexington avenue, corner 52d street. Cremation was private.

George Chahoon

PLATTSBURG, N. Y., July 30, 1934—George Chahoon, former State Senator from the Clinton-Essex-Washington-Warren County district and for many years one of the leading business and political figures of the north country, died at his home in Ausable Forks yesterday at the age of 94.

Mr. Chahoon was born in Sherborne, Chenango County, on February 2, 1840, the oldest of eight children of the late John Chahoon, who was a contractor. His mother was Temperance Jameson Chahoon. From 1850 to 1861 he studied in private schools in Virginia. He moved to Washington at the outbreak of the Civil War.

Shortly after the war and during the Reconstruction period, Mr. Chahoon became Military Mayor of Richmond, Va., when he was 25 years old. He served for four years, at the expiration of which he was highly commended by his superior officers.

He became interested in the J. & J. Rogers Company of Ausable Forks, N. Y., then engaged in the iron industry and now among the leading manufacturers in the United States of sulphite pulp and paper. The business of the company has for a century or more been the life of the Ausable Valley in the heart of the Adirondacks. Mr. Chahoon was for years vice-president, succeeding the late James Rogers in the presidency.

Mr. Chahoon married twice. His first wife was Miss Mary Rogers, daughter of James and Elizabeth Hasbrouck Rogers of Ausable Forks. In 1898 he married Christina Van Allen, daughter of Adam and Eleanor Van Allen of Albany. He is survived by three children, Miss Mary Chahoon and I. Hasbrouck Chahoon, both of Ausable Forks, and George Chahoon, Jr., of Grand Mere, Canada, former president of the Canada Power and Paper Corporation, and a brother, William Chahcon of Wilker-Barre, Pa.

Robert J. Wood

[FROM OUR REGULAR CORRESPONDENT]

HOLYOKE, Mass., July 31, 1934—Robert J. Wood, a former paper mill superintendent, died last week at his home, 244 Walnut street. He was superintendent of the Nonotuck Division of the American Writing Paper Company for ten years, learning his trade in England, where he was born. He had been a resident of this country for 64 years.

Nathan G. Reed

HOLYOKE, Mass., July 31, 1934.—Nathan G. Read, presirent of the Read Paper Company, of Ithaca, N. Y., who died there last Sunday, was formerly vice-president and general manager of the American Tissue Mills, Inc., of this city. He left there to take a position in mills in Connecticut and later went to Utica.

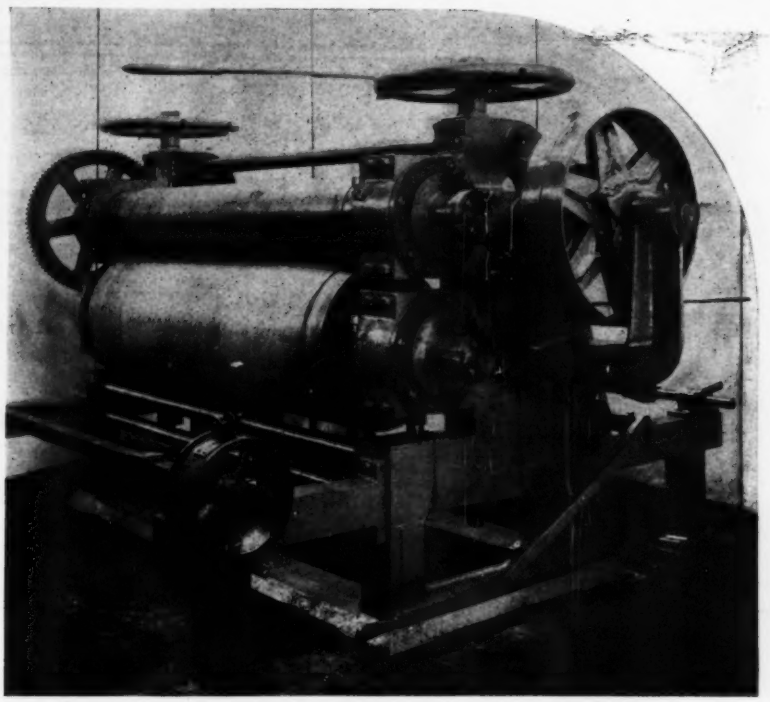
Carthage Pulp & Board Co. Sold

CARTHAGE, N. Y., July 30, 1934—A foreclosure sale was held here this week at which the plant of the Carthage Pulp and Board Company was sold to the Philadelphia Liquidators Inc., of Philadelphia, Pa. The only bid was made by Urban C. Hirschey, prominent paper manufacturer, who represented the Philadelphia concern. Referee James J. Butler presided at the sale. Announcement was made that the new owners have leased the property to the recently organized Carthage Papermakers Inc. which has occupied the property for the past year. The amount involved in the sale of the plant was said to be $105,000. At this time the Philadelphia Liquidators holds a greater portion of the bonds of Carthage Papermakers. The latter concern was formed in 1932 by a group of local business men with Bert W. Thomas, William J. Cassidy and Charles Miller as controlling factors. It was stated that operations would continue under the supervision of Mr. Thomas while Mr. Cassidy will remain as president. Mr. Thomas has been identified with the mill since 1926 when it was operated by the Carthage Pulp and Board Company.

To Sell Paper Machine at Sandusky

SANDUSKY, Ohio, July 30, 1934.—M. L. Rankin has been commissioned to sell the paper machine and auxiliary equipment in the paper mill at this place which was operated by the Paper and Textile Machinery Company.

SKF EQUIPPED
BUILT BY
JOHN
WALDRON
CORPORATION



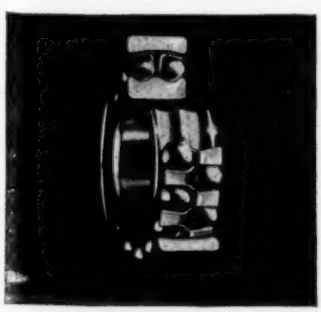
MACHINES RESPOND TO EFFICIENCY OF ▼ ▼ ▼ SKF BEARINGS

THERE ISN'T ANY difference between SKF Bearings on the main roll of this Heavy Duty Centennial Embosser and SKF's that keep all units of big Fourdriniers rolling smoothly . . . continuously . . . at the peak of production. For where an SKF performs in one place, it performs just as efficiently in another.

And whether it's a machine that turns pulp into paper or embosses paper napkins, there's a definite need for bearing dependability. Any experienced operator knows that. And he knows that use of SKF's in embossers results in a clean-cut embossed stock... indefinitely. That means quality and quantity of product combined with a minimum of bearing wear... big power saving... maintenance costs cut to the bone. In other words, SKF performance that supports this shaft is the same performance that keeps the wheels of paper machinery turning... smoothly!

3258

● You may buy a bearing as a bargain but try and get a bargain out of using it, for nothing is apt to cost so much as a bearing that cost so little.



SKF INDUSTRIES, INC., FRONT STREET AND ERIE AVENUE, PHILADELPHIA, PA.

SKF
Ball and Roller Bearings

CONSTRUCTION NEWS

A Summary of Vital Facts Regarding Construction, Finances and Operation of Paper Mills

Construction News

Greenville, Miss.—The United States Gypsum Company has awarded general contract to the H. K. Ferguson Company, Hanna Building, Cleveland, Ohio., for new addition to local insulating board mill, recently referred to in these columns, to be one-story, 145 x 234 feet. Superstructure will be placed under way at early date. New unit will cost over $250,000, with equipment. General contracts for miscellaneous construction as well as equipment will soon be let. An award has been made to the Northern Engineering Works, 210 Chene street, Detroit, for a traveling crane. Company headquarters are at 300 West Adams street, Chicago, Ill.

Hackensack, N. J.—The Terminal Carton Corporation, recently organized with capital of $100,000 by Robert J. Fogelman, Hackensack, and associates, plans operation of local plant for manufacture of paper boxes and containers. New company is represented by Robert J. Bunevich, 610 Main street, Hackensack.

Chicago, Ill.—The Container Corporation of America, Inc., 111 West Washington street, plans rebuilding of portion of branch plant at 1003 Elton avenue, recently damaged by fire, with loss estimated close to $20,000.

Dayton, Ohio—The Central Ohio Paper Company, 131 East Sixth street, is completing plans and soon takes bids on general contract for extensions and improvements in local storage and distributing plant. Cost over $20,000, with equipment. W. H. Bancroft is vice-president and local manager. Company headquarters are at 226 North Fifth street, Columbus, Ohio.

Chicago, Ill.—The Western Bag and Paper Company, 6358 South Wentworth avenue, manufacturer of paper bags and containers, has filed notice of change in capital from $100,000 to 1,500 shares of stock, no par value.

Fernandina, Fla.—The Florida Agricultural and Industrial Relief Commission, Jacksonville, Fla., is advancing plans for proposed Federal aid through PWA in amount of $5,500,000, for construction of new paper and pulp mill on site at Fernandina. Hearings are being held with Federal officials and early decision will be made. The proposed new mill will be leased to the Union Bag and Paper Corporation, Woolworth Building, New York, N. Y., for operation. It will consist of several units, equipped for large production.

Elmira, N. Y.—The Milo Folding Box Corporation, recently organized with capital of $25,000, plans operation of local plant for the manufacture of folding and other paper boxes and containers. Directors of the new company include Homer C. Pelton, 146 Main street, and Ralph Platman, 127 Stark avenue, both Penn Yan, N. Y.

Norwood, Ohio—The United States Playing Card Company, Beech avenue, Norwood, Cincinnati, has filed plans for extensions and improvements in steam power house at mill, including installation of new equipment. Work will cost over $25,000, with equipment. General contract has been awarded to the Fisher-DeVore Construction Company, Cincinnati.

Hoquiam, Wash.—The Grays Harbor Pulp and Paper Company has secured estimates of cost and will soon award general building contract for new addition to pulp mill at plant, recently referred to in these columns. Structure will be of brick and steel type, and will be equipped for about 50 tons of sulphite pulp per day, advancing plant rating to 200 tons daily. It is estimated to cost over $100,000, with equipment.

New York, N. Y.—Stanley Boxes, Inc., recently formed with capital of $20,000, plans early operation of local plant for the manufacture of paper boxes and containers. New company is headed by J. I. Seifer and Max M. Davis, 171 East 102d street, New York.

Chicago, Ill.—The Container Corporation of America, Inc., 111 West Washington street, manufacturer of corrugated and other paper boxes and containers, has let general contract to the Avery Brundage Company, 11 South La Salle street, for new one-story power house addition at plant on North Ogden avenue, recently referred to in these columns. It will be one-story, 30 x 70 feet, estimated to cost over $75,000, including equipment. The Stone & Webster Engineering Corporation, 49 Federal street, Boston, Mass., is consulting engineer. Work will be placed under way at once.

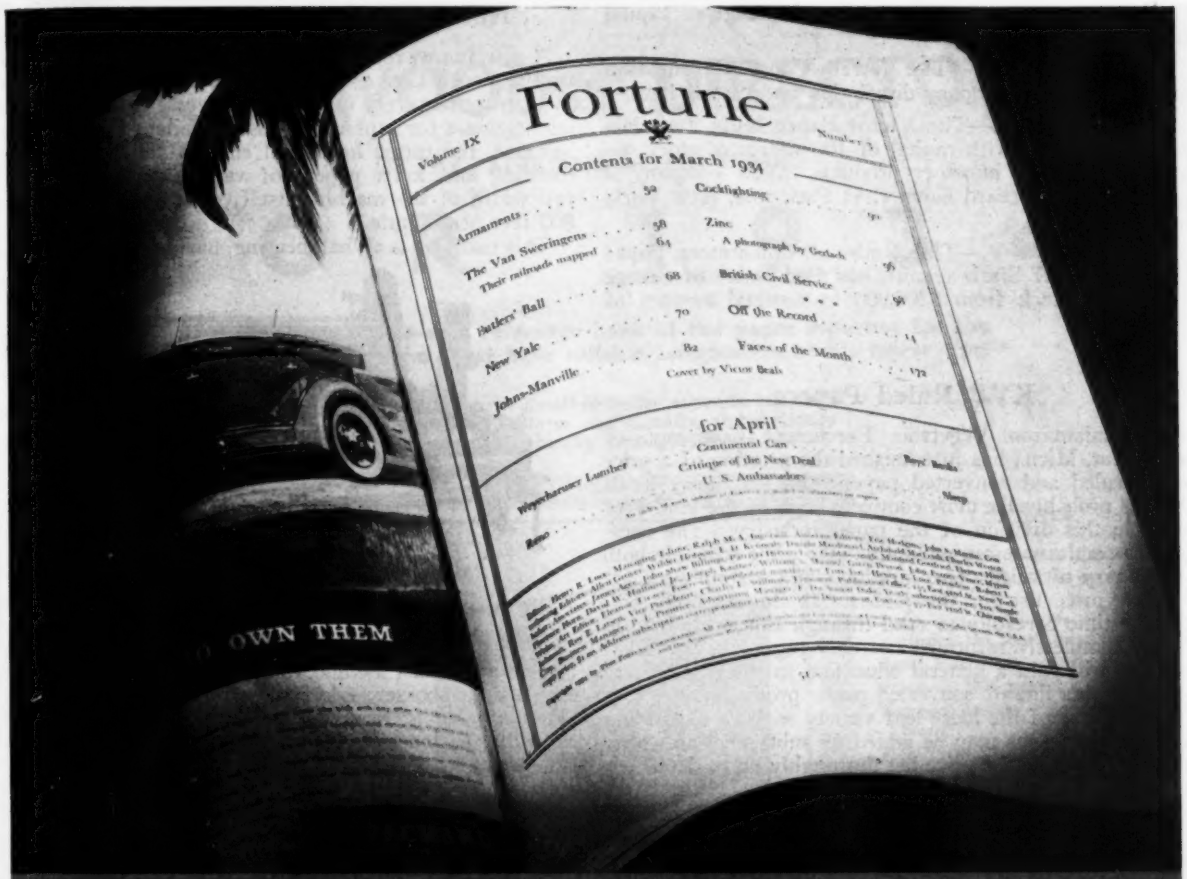
New Companies, Etc.

Chicago, Ill.—The J. W. Butler Paper Company has been incorporated with capital of 10,000 shares of stock, no par value, and main offices at 223 West Monroe street, to deal in paper stocks of various kinds. The incorporators are Paul Butler, H. W. Reiher and A. J. Gravelle. It is understood that company will change name at once to the Butler Company.

New York, N. Y.—The Continental Paper Stock Company, Inc., has been chartered with capital of 100 shares of stock, no par value, to deal in paper goods of various kinds. Isaac C. Donner, 1040 Anderson avenue, Bronx, is one of the incorporators.

Athol, Mass.—The Judd Box Company, Inc., has been incorporated with capital of 5,000 shares of stock, no par value, to manufacture and deal in cartons, paper containers, etc. F. L. Warner is president; Howard T. Judd, 2 Riddel road, Greenfield, Mass., is treasurer and representative.

New York, N. Y.—The Heppe Paper Box Company,



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TITANOX

412 Lafayette street, has filed notice of change of capital from $15,000 to $8,000.

Watertown, N. Y.—The Jewell Paper Corporation has filed notice of company dissolution under state laws.

New York, N. Y.—The Victor Paper Mills, Inc., has been incorporated with capital of 100 shares of stock, no par value, to deal in paper products. New company is represented by Bernard Kovner, 41 Park row, New York, N. Y.

New York, N. Y.—The National Consumers Paper Corporation, 227 Sixth avenue, has filed notice of change in company stock from $200,000 to nominal amount of $500.

KVP Ruled Papers

The Kalamazoo Vegetable Parchment Company, of Parchment, Mich., has just finished the printing of a price list on ruled and converted papers and stationery items which is probably the most complete book of the kind ever issued in this division of the paper industry. The company has endeavored to make this new price schedule both a dictionary of ruled paper products and a simplified, yet complete price list for the jobber. If the salesman will take the time carefully to read through this price list, he will be completely informed not only regarding the KVP line, but will gain a general education in the pricing and selling of this line of converted paper products.

The book is of the loose leaf variety with an expanding back so that leaves may be added or subtracted as necessary, thus keeping the price list thoroughly up to date.

Czechoslovak Paper Industry Improves

The Czechoslovak pulp and paper industry continued to show improvement during April. Production of wood pulp remained at about the same level, i.e., the mills working at approximately 70 per cent capacity, according to a report from B. Franklin Steiner, American Consulate General, Prague. Paper production in April, however, reached a total of 13,870 metric tons, as against 12,480 metric tons in April, 1933, indicating an increase of 11 per cent. For the first four months of 1934, the output of the paper mills was only 60 metric tons less than during the corresponding period last year and the opinion is expressed that this industry has now touched bottom. Wood pulp mills, while maintaining their position, were adversely affected by foreign exchange regulations in Germany, making sales in that country difficult. Notwithstanding the devaluation of the Czechoslovak currency by 16 2/3 per cent, the outlook for the future is not favorable since the increase in pulpwood prices outbalanced the advantage offered by the devaluation.

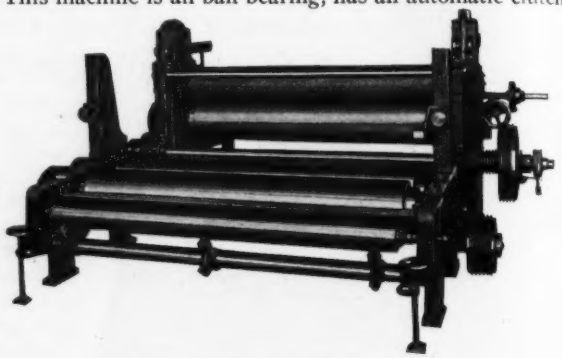
Cordage and Twine Filing Prices

WASHINGTON, D. C., August 1, 1934—The National Recovery Administration today announced its approval of the form for filing prices in the cordage and twine industry, as proposed by the Code Authority of that industry. The order, however, stipulates that this approval is not to be construed as an approval of certain classifications of customers, nor of the methods of charging freight. The order becomes effective as of July 24, 1934, and is revokable upon five days' notice.

New Rewinder for Tissue and Kraft

A new jumbo roll embossing drum winder is announced by the Paper Converting Machine Company, Green Bay, Wis., manufacturers for the past several years of embossing machines for napkins, towels and toilet papers. The new machine, illustrated here, will emboss and rewind tissue, toweling and kraft papers of various widths up to the full width of the machine itself, with a speed of 600 to 800 feet per minute.

This machine is all ball bearing, has an automatic clutch,



REWINDER FOR TISSUE AND KRAFT

and an adjustable method for synchronizing the speed between the embosser and rewinder. The slitter roll on the drum winder is hard all over for slitting any widths. Sturdily constructed, this embossing drum winder should give years of dependable service.

Preparation and Colorimetric Properties of a Magnesium-Oxide Reflectance Standard

The fraction of incident light reflected by pulp and paper is, of course, one of the most important items in their list of value-determining properties. This fraction is properly called reflectance; multiplied by 100, it closely approaches what is known in the paper trade as percent brightness. It is very hard to devise a practical instrument which will measure reflectance in absolute terms directly; adjustments are frequently necessary and corrections have to be applied in order to get an accurate result. On the other hand there are a number of photometers on the market which easily and accurately compare the brightness of two surfaces. On this account it is customary to compare the reflectance of a paper or pulp sample with that of a reflectance standard. Usually this standard is either magnesium oxide or a piece of opal glass which has been compared with magnesium oxide. The reflectance of the paper or pulp sample is then computed from the known absolute reflectance of the standard. Bureau of Standards Letter Circular LC 395 (available on application, free of charge) gives detailed instructions for the preparation of a magnesium-oxide reflectance standard. It is made by depositing the smoke from burning magnesium on a suitable base; a few simple precautions insure that the same kind of surface is obtained everytime. The colorimetric properties of such a surface are also given. For example, if the iliumlnating beam is at 45 degrees from the normal, and if the direction of view is along the normal (standard conditions adopted by the International Commission on Illumination, Cambridge, 1931), such a surface of magnesium oxide has exactly the same brightness as an ideal perfectly reflecting, perfectly diffusing standard. The conversion factor in this case takes on the very convenient value, 1.00.

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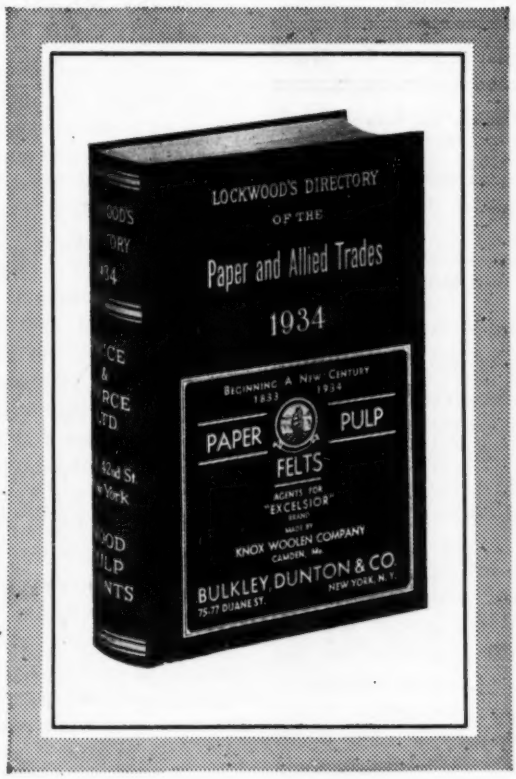
Paper Bag Manufacturers
Paper Box Manufacturers



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Vol. XCIX New York, August 2, 1934 No. 5

This publication is now and always has been printed on paper made in the U. S. A.

COMING EVENTS

Technical Association of the Pulp and Paper Industry, Fall meeting. Headquarters Multnomah Hotel, Portland, Ore., September 10-13, 1934.

Paper and Pulp Section, National Safety Council, annual convention, Hotel Statler, Cleveland, Ohio, October 1-5, 1934.

ALBERT A. TANYANE

Mr. Albert A. Tanyane, the general advertising manager of the PAPER TRADE JOURNAL and Lockwood's Directory of the Paper and Allied Trades, has passed on. The Lockwood Trade Journal Company, Inc., publishers of these publications, announces Mr. Tanyane's death with deep sorrow.

Mr. Tanyane, immediately after leaving Yale University, entered the publication field and was connected with important publication enterprises in New Haven, Worcester and Boston. He showed a natural aptitude for this line of work from the beginning and learned to love it. It was natural he should succeed in this field.

The Lockwood Trade Journal Company, learning of his record and his success, in 1909, after it had lost the services of a valued employee, offered him the position of New England advertising manager and the offer was accepted. In spite of the fact that he was obliged to follow in the footsteps of a highly skilled, widely experienced and extremely popular personage, Mr. Tanyane more than made good and exceeded the expectations of the publisher. His rugged honesty appealed to the members of the pulp and paper industry in that territory and his industry and his apparent boundless energy made it possible for him to succeed in a task which would have dismayed a less ambitious and a less able man.

Because of his splendid record in the New England field, in 1915 he was called into the New York office to assume the position of general advertising manager. He accepted this larger responsibility with enthusiasm and again more than fulfilled the expectations of the publisher in his ability, in his industry and in his character. No obstacle was too difficult for him to surmount, no task too hard for him to undertake and no endeavor too strenuous for him to attempt in promoting the welfare of his publications. His work was a constant inspiration to his colleagues and will cause his memory long to endure in this office as the years pass along. His intense interest in his work, his devotion to the publications he represented and his loyalty under all circumstances to the pulp and paper industry were generally recognized. These, as well as other favorable characteristics, made him many friends among paper men throughout the country who will regret to learn of his death.

PRECISE MEASUREMENT OF AIR PERMEABILITY OF PAPER MADE POSSIBLBE

A sensitive instrument has been developed by the National Bureau of Standards for measuring the rate at which air passes through paper and other porous materials in sheet form. The air permeability of paper is significant in a great many ways, it is pointed out. Sheathing paper used in the walls of houses should be airtight to minimize heat losses from air infiltration. Many food products require air-tight wrappers; others require grease-proof wrappers, and there is a close relation between the permeability of air and the permeability of oils. A well-closed structure, not too permeable to air, is desired in cigarette paper to insure good draft through the burning tobacco. The dielectric strength of paper used in insulating electric cables is closely related to the air permeability. Certain types of bag paper require a fairly definite air permeability, since the process of filling the bags demands that the paper act as a filter to retain powdered material as the air escapes through the paper.

The air permeability test is sometimes used to predict the rate of absorption of the saturant in the preparation of such materials as roofing felt, paraffined paper, sheathing paper, bakelite, and cable paper, since both properties depend upon the porosity of the untreated sheet. For the same reason air permeability is related to the rate of drying of printing ink on printing papers.

A preliminary survey indicated that the most common sources of error in existing instruments for testing the air permeability of paper are leakage, especially at the edges of the specimen, fluctuations in driving pressure, lack of sensitivity, and restricted range. The new instrument contains a permeability cell of novel design, in which an annular cell surrounds the inner testing cell. The air flow is so regulated that there is no lateral pressure gradient at the boundary of the inner cell, and hence no leakage into or out of it. The pressure regulator is a form of automatic diaphragm valve designed to maintain a very steady pressure drop across the instrument. The amount of air, which in a given time reaches the inner cell by flowing through the specimen under the influence

of this constant pressure difference, is measured with a capillary flow meter containing four carefully calibrated capillary tubes. Results are reproducible on an identical area to within a few tenths of one per cent.

The range of the new instrument is about a thousand times that of most other instruments available for the purpose. It will accommodate materials of any thickness up to half an inch, and it is not necessary to cut them in order to make the test. Tests can be made rapidly, since the element of time is taken care of in the calibration and the duration of the test need not be measured. The test area is larger than is usually found in air permeability instruments in order better to sample the material. The instrument is well adapted to the testing of leather and some other sheet materials.

Work of the Import Committee

An extended investigation by representatives of the Import Committee of the American Paper Industry of importations of dutiable printing papers from Canada indicates that customs officials are now exercising the greatest care to prevent the admittance of such papers improperly as duty-free standard news print. All paper in recognized poster shades is being classified for duty whether in sheets or rolls, and colored news print of news print quality is classified for duty when imported in sheets; such paper imported in jumbo rolls is admitted only upon issuance of bonds to cover a dumping duty. Canary news is classified for duty in either sheet or roll form. Importers have tried to secure free admission of all such papers as standard news print, but data, provided by the Import Committee, assisted customs officials in determining the proper classification.

As the result of representations by the Import Committee, Treasury Department officials have called for an investigation in Japan of the situation involving paper napkins which are being offered at exceedingly low prices.

Large quantities of screening board imported from Canada are under investigation to determine the proper classification. Fifteen carloads imported at Milwaukee are claimed by the importer to be dutiable at 20 per cent as test container board, and not dutiable as paper board, on which, owing to Canadian regulations, the duty would be 39 per cent. The same problem is involved in fifteen shipments at Sault Ste. Marie. Paper board imported at Cleveland and Buffalo is being classified for duty as vat lined board, at 30 per cent, and not admitted at the 10 per cent rate for unprocessed paperboard.

Importers have abandoned cases which they had protested to the Customs Courts, in which they had claimed lower rates of duty than those levied on overlay paper, embossed fiber board, drawing board, and lampshade board.

L. W. Crouse Joins Penick & Ford

Lester W. Crouse, who is a well known starch sales engineer, has joined the organization of the Penick Ford Sales Company and will represent that company in the paper trade of New England, part of New York State and Ohio.

Mr. Crouse has had wide experience in this kind of work and has had several years' experience in handling special starches for paper mill applications. He has recently spent considerable time in the laboratories of the company at Cedar Rapids, Iowa, where he has become thoroughly acquainted with the manufacturing processes of the company.

To Build Newsprint Mill in South

NASHVILLE, Tenn., July 30, 1934.—The news print committee of the Southern Newspaper Publishers Association meeting here Saturday made arrangements whereby plans for the construction of a news print mill in the South will "proceed at once," James G. Stahlman, publisher of *The Nashville Banner* and chairman of the committee, announced.

Dr. Charles H. Herty, director of the Pulp and Paper Laboratory of the Industrial Committee of Savannah, Inc., the chemist whose research led to the manufacture of news print from Southern pine, attended the meeting.

Cranston Williams, secretary-manager of the Southern Newspaper Publishers Association, reported the result of a questionnaire sent two weeks ago to the 219 members of the association asking information regarding their use of news print. Responses by members of the association were "highly satisfactory," he said.

E. K. Gaylord, publisher of the *Oklahoma Ctiy Oklahoman and Times* and president of the association, flew to Nashville from Estes Park, Colo., to be present at the afternoon session of the meeting.

Also present were:

Emanuel Levi, vice-president and general manager of *The Louisville Courier Journal and Times.*

James L. Mapes, publisher *Enterprise and Journal,* Beaumont, Texas, chairman of the board of the association.

Clark Howell, Jr., vice-president and general manager of *The Atlanta Constitution.*

Curtis B. Johnson, publisher *Charlotte Observer.*

Myron G. Chambers, business manager *Knoxville News Sentinel.*

Victor H. Hanson, publisher *Birmingham News and Age Herald.*

Henry P. Johnson, publisher *Huntsville Times.*

John Coffin, representing the Hearst newspapers.

William G. Chandler, general business manager of the Scripps Howard Newspapers, was unable to attend. He is chairman of the news print committee of the American Newspaper Publishers Association.

Maine Mills Using More Sulphite

PORTLAND, Me., July 28, 1934.—The sharp rise in sulphur receipts at this port is regarded here as a good indication that pulp and paper mills are increasing operations.

Two steamers have already arrived from the Gulf this month with part cargoes and a third is believed to be on its way. The July total is placed at 5,100 tons, a gain of 3,600 tons over last year's arrivals.

During May, June and July 9,480 tons of sulphur arrived from Texas, whereas a year ago for the same three months only 3,800 tons were shipped here.

Receipts to date are more than double those a year ago, 25,378 tons, compared to 11,550 tons.

Waste Material Year Book

The National Association of Waste Material Dealers, Times Building, New York, has just issued its Year Book and Code Guide for 1934. Aside from carrying all the approved classifications covering the waste material trade, this book contains a pulpwood section, all the trade customs affecting the waste material trade and a special code section containing not only the code for the waste material trade, but all related codes, together with the personnel of many code authorities.

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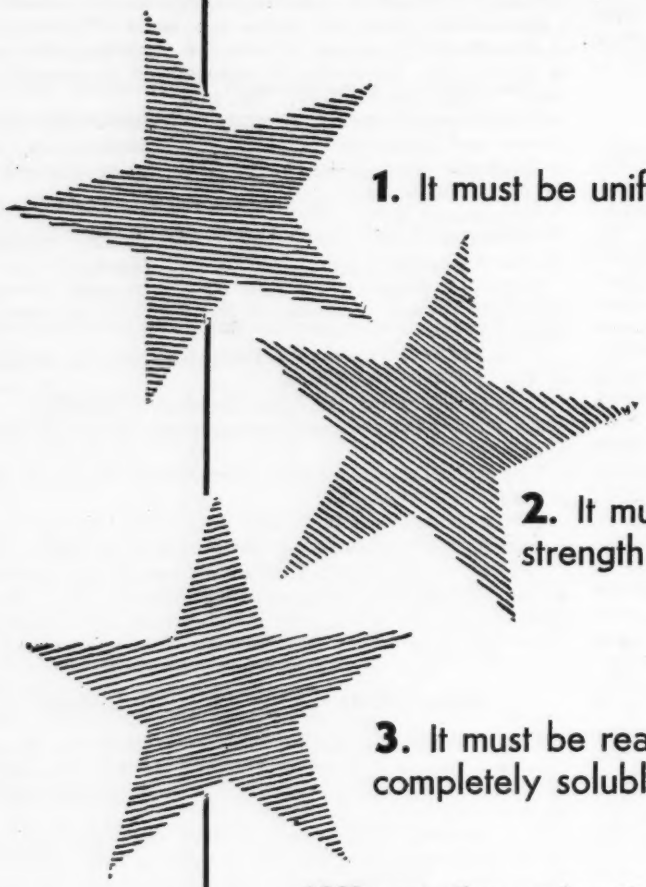

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Section of the
Technical Association of the Pulp and Paper Industry
Edited by Ronald G. Macdonald, Secretary

Cellulose and Paper*

Harry F. Lewis[1]

Although the cellulose chemists in the United States are still largely interested in the technical application of cellulose, there has been a healthy increase in interest in the fundamental problems of cellulose and related substances. This is evidenced by the interest at the recent meetings of the Cellulose Division of the American Chemical Society and by the organization of a committee on Fundamental Research in the Technical Association of the Pulp and Paper Industry. Recent laboratories in the general field of cellulose and paper include the new paper laboratory in the New York State College of Forestry *(1)*, the laboratory for wood research at the University of Idaho *(2)*, and that of the Division of Pulp and Paper Research, Department of Forestry and Geological Development *(3)*, at Savannah, Georgia.

Wood

Kurth *(4)* has continued his work on the distribution of and the nature of extractives in the long leaf pine and the short leaf pine which he finds are analogous to those in slash pine reported earlier *(5)*. Stamm *(6)* has shown that the capillary system in Douglas fir and Sitka spruce sections opens when treated with chlorine gas, followed in some cases by a treatment with ammonia gas or ammonia water as indicated by permeability measurements. This behavior probably results from the solvent action on the lignin of the pit membranes which constitute the major resistance to flow. In another contribution *(7)* this same author describes a conductivity method for determination of the capillary dimensions of wood.

Anderson and Sherrard *(8)* report the isolation of a new acid, dehydroperillic acid, from the heartwood of western red cedar. Evidence is added to show that this compound is an isomer of cuminic acid and a structural formula is suggested.

Richter *(9)* studies the action of salt solution on wood cellulose. He finds that, when wood is allowed to float in sea water for some time, small amounts of salt are absorbed. The practical consequences in sulphite cooking are: a decrease in yield of 10 per cent; comparatively small decrease in customary strength qualities on unbleached sulphite; and a serious decrease in general strength qualities of bleached stock. Unbleached sulphite coming in contact with salt-containing water suffers an equivalent decrease in physical properties. In both cases the resulting bleached stock has an inferior yellow tinge, lowered alpha-cellulose content and high copper number.

A number of interesting x-ray investigations in regard to the structure of fibers and fiber walls have been reported. Stillwell *(10)* describes the variations in the structure of wood fiber walls. Sisson and Clark *(11)* present a method for quantitatively comparing orientation in cellulose fibers. Thomassen and McCready *(12)* use the x-ray for following the penetration of electrolytes in the wood. They find that penetration is more rapid in summer wood than in spring wood. Penetration of caustic soda is faster than penetration of water alone. Likewise, the caustic soda penetration occurs at a faster rate at 132 deg. C. than at 95 deg. C. Of much interest to the cellulose chemists is the general report of G. L. Clark *(13)* covering a decade of applied x-ray research.

The use of the moving picture microscope in developing the structure of cellulose fibers was shown by H. F. Lewis and Olga Smith at the Fall Meeting of the Technical Association of the Pulp and Paper Industry in Appleton, Wis. At this same meeting, W. E. Rogers had on exhibition microscopic cross sections of various papers enlarged 1600 times.

Cellulose, Hemi-Cellulose and Pentosans

Ritter and Kurth *(14)* describe "holocellulose," representing the total carbohydrate fraction of extractive-free maple wood and outline a rapid method which has been developed at the Forest Products Laboratory for isolating this fraction; this method consists in repeated alternate treatments of extractive-free wood with chlorine and alcohol-pyridine solution. In ten hours of this extraction all of the non-carbohydrate is removed with the exception of a small amount of lignin which is taken out with calcium hypochlorite. The residual material consists of hemicellulose and cellulose and this the authors have termed "holocellulose," meaning whole or entire cellulose in preference to the term "Skelettsubstanzen," previously used by Schmidt.

Hawley and Norman *(15)* from the same laboratory take up the differentiation of hemi-cellulose according to two groups: (1) the incrusting substances not closely related with the cellulose and containing in practically all cases a uronic acid and (2) those very intimately connected with the cellulose and never containing a uronic acid. These two groups are accurately separated in the Cross and Bevan cellulose determination, provided that there is no pretreatment of the material with either acid or alkali before chlorination. The name "polyuronide" sug-

* Chapter XXI, Annual Survey of American Chemistry, VIII. Reprinted by permission of The Chemical Catalog Company, 330 W. 42nd Street, New York, N. Y.

[1] Member TAPPI, professor, Institute of Paper Chemistry, Appleton, Wis.

gested by Candlin and Schryver applies to the hemi-celluloses in the first group. To those in the second group the author proposes the term "cellulosan."

Wise, Hamer and Peterson *(16)* and Wise and Unkauf *(17)* describe the water-soluble polysaccharide of western larch. This they show to be an arabogalactan containing 12 per cent anhydroarabanose and 82 per cent anhydrogalactose. The data indicates that the arabogalactan from eastern larch is identical with that from western larch and that this particular arabogalactan is a homogeneous chemical compound.

Clarke and Gillespie *(18)* have studied the action of acetic acid upon certain carbohydrates, such as cellulose and hydrated cellulose, and find that reducing carbohydrates and non-reducing furanoses, treated with boiling acetic acid, caramelize; that non-reducing glycosides of the pyranose type become esterfied and that potato starch yields amorphous acetates.

Ritter, Mitchell and Seborg *(19)* considered the factors that influenced the conversion of cellulosic materials to sugar. The results show that with a given concentration of acid, variations in sugar yields may be due to differences in the temperature of the strong acid during its contact with the cellulose, in the time during which the cellulose remains in the strong acid, and in the cellulosic materials themselves, since some char more readily than others.

Newsome and Sheppard *(20)* have measured the sorption of water vapor by cellulose and cellulose acetate; Shutt and Mack *(21)*, the retention of glycerol and glycols by cellophane and cotton cellulose. Evidence is presented in the latter article to show that the glycerol and glycols are held on the ends of the cellulose micelles by adsorption. On the basis of this theory the micelles of cotton cellulose seem to be about three times as long as those of the regenerated cellulose and cellophane.

Mease *(22)* has studied the adsorption of alcohol by fibrous materials such as cotton, wool, silk and rayon, to show that these hold an appreciable amount of alcohol even when dried to constant weight at temperatures considerably above the boiling point of alcohol.

The action of acids, alkalis, oxidizing agents, heat and light on rag stock and highly purified wood pulp has been very thoroughly studied by Lewis *(23)*, *(24)* and the rate of degradation followed by means of determinations for alpha-cellulose, viscosity, copper number and other analytical constants.

Sanders and Cameron *(25)* find by x-ray study that the unit cell of cellulose in cotton stalks and cusps is the same as that in cotton linters, spruce, pine and poplar. They conclude that differences in physical properties among the various celluloses are due chiefly to differences in micelle or fibroid structures.

Cellulose Esters

Sheppard and Newsome *(26)* report on heats of wetting of cellulose acetate by aliphatic alcohols and aromatic hydrocarbons. They make a further contribution to the study of the fine structure of cellulose ester plastics from the point of view of sorption. From the data they calculate pore volume and specific surface.

Sheppard and Sweet *(27)* have studied the solution and de-solution of cellulose esters by homologous series of carbon compounds and distinguish the factors involved in making solubility measurements for cellulose esters.

Sheppard and Schmitt *(28)* describe a method for measuring resistance to scratching of cellulose films and plastics.

Winning and Williams *(29)* have used a balance of the McBain-Bakr type to study the sorption of chloroform vapor by various materials, among which are cellulose acetate and benzoate, benzylcellulose and cellulose benzoate. They characterize the sorbent materials as typical swelling gels.

Watkins and Ryan *(30)* describe the preparation and properties of laminated safety glass in which the laminating film is either cellulose acetate or cellulose nitrate.

Lignin

A considerable interest in the subject of lignin has been shown in the past two years by American chemists. Early in 1932 Sherrard and Harris *(31)* published a paper dealing with the factors influencing the properties of isolated wood lignin. In this they pointed out that temperature, acid concentration and length of time of reaction must be controlled in order to obtain sulphuric acid lignin as nearly unchanged as possible. Conditions which produce the lowest yield of lignin by the sulphuric acid method give the highest yield of hydrolyzed carbohydrates. Lignin isolated by 70 per cent sulphuric acid at 10 deg. C. for 16 hours is free from carbohydrates, gives a higher methoxyl content and is more readily methylated than lignin isolated by other methods. This paper was followed shortly by another one from the same laboratory by Ritter, Mitchell and Seborg *(32)* on the potential reducing numbers of lignin and the carbohydrates of wood, studied from the point of view of the effect of these treatments for isolating lignin and cellulose. Ritter, Seborg and Mitchell *(33)* also studied the factors affecting the quantitative determination of lignin by the 72 per cent sulphuric acid method and recommend modifications in the commonly used Forest Products method to avoid the various errors of that method. These modifications include the extraction of the residue of the alcohol-benzene extraction with hot water, the digestion temperature of 20 deg. C., digestion time of two hours and hydrolysis of the diluted mixture for four hours.

At the same time Peterson, Walde and Hixon *(34)* report on the effect of temperature on the sulphuric acid method for lignin and point out that the best temperature for the digestion of the carbohydrate material by the concentrated acid is in the neighborhood of 15 degrees. At higher temperatures, much higher values for lignin are obtained.

In a comprehensive paper by Billington, Simmonds and Baird *(35)* there are compared the regular Forest Products Laboratory method, the modified Forest Products Laboratory method, the Ross-Potter method of the Canadian Forest Products Laboratory, and the Willstaetter-Zechmeister method. For identical samples of wood, the lignin content was shown to vary between 24.15 per cent by the Willstaetter-Zechmeister method to 30.85 by the original Forest Products Laboratory method. The authors recommend the modified Forest Products Laboratory method for routine purposes.

Lewis, Koonce and Young *(36)* have studied the Noll method involving a digestion with 78 per cent sulphuric acid in the presence of dimethylaniline; they find that the Noll method gives erratic results with unbleached soda aspen pulps.

Harris *(37)* confirms previous observations on the decrease in yield of lignin from wood as a result of preliminary extractions with dilute alkali and shows that the material removed from wood by such treatment is really lignin, as indicated by the constant methoxyl content of the lignin before and after the alkali treatment of the wood.

Phillips and Goss *(38)*, *(39)*, *(40)* continue their excellent series on the chemistry of corn cob lignin with three additional papers. These describe the distillation of corn cob alkali lignin with zinc dust in an atmosphere of hydro-

gen, the effect of dry distillation of corn cob alkali lignin in reduced atmosphere of carbon dioxide, and the oxidation of alkali lignin with nitric acid and with hydrogen peroxide. In this latter reaction they obtain chiefly oxalic acid, but when the lignin is first methylated and then oxidized, they get good yields of anisic acid. That the methoxy group of the anisic acid comes from methylation and not from the original lignin is supported by the fact that ethylated lignin under the same conditions of oxidation gives *p*-ethoxybenzoic acid.

Cooking Process

Aronovsky and Gortner *(41), (42), (43)* present three additional papers on the cooking of wood; in the first, the cooking agent is sodium sulphate; in the second, sodium thiosulphate; and in the third, sodium sulphite.

Two papers involving the cooking of rags have appeared from the laboratories of the Institute of Paper Chemistry. Laughlin *(44)* has carried out a fundamental study of the rag cooking operation, especially at higher temperatures and pressures, and describes in some considerable detail the chemical changes taking place in the rags during cooking and relates these with strength characteristics of hand sheets made from the cooked rags. Lenher *(45)* has developed a modified process for cooking blue denims which involves a second stage treatment with sodium hydrosulphite. This process yields an easily bleached stock of high strength characteristics.

Ground Wood

One of the most sensational developments of the last few years is that of the production of newsprint from Georgia slash pine, by Herty *(46), (47),* which has now been carried through in the laboratory, semi-commercial and commercial stages. Additional work from the same laboratory is reported by McNaughton and Allen *(48)* and by Rommel *(49)*. Schafer and Santaholma *(50)* have investigated the chemical properties of screen fractions of black gum and slash pine ground wood pulps and show that the lignin content varies from fraction to fraction and is higher in the finer fractions than in the coarser. They have also studied *(51)* the effect of different-sized fibers on the physical properties of ground wood pulp and find that the average fiber length of the pulp is related in a general way to nearly all the usual strength and suspension properties.

Sulphite Process

Christiansen *(52)* and Lang *(53)* describes two types of circulating systems for use in connection with sulphite pulping and outline the advantages of such circulations. Chidester and McGovern *(54)* studied the effect of relatively high sulphur dioxide concentration in sulphite pulping and conclude that a high range of free sulphur dioxide promotes better circulation by the evolution of greater amounts of gas and causes better penetration. Monsson and Chidester *(55)* compare the pulping value of Russian and Canadian spruce by the sulphite process and show no significant difference in the quality of pulp produced from either type of spruce. Hepher and Jahn *(56)* have made a laboratory study of the use of ammonium sulphite as a cooking agent.

Sulphite Waste Liquor

In the field of sulphite waste liquor, Phillips *(57)* discusses the dry distillation of residue of waste sulphite liquor and compares the results with those obtained in the dry distillation of alkali lignin. Benson and Benson *(58)* and Benson *(59), (60)* present a series of papers on the sulphite waste liquor pollution of sea water, detection of sulphite waste liquor in sea water and the utilization of sulphite waste liquor. Among the important uses for the liquor are road binder, linoleum cement, tanning agent, alcohol production and as a fertilizer.

Alkaline Pulping

Bray and Curran *(61)* have produced a strong easy bleaching pulp from long leaf pine by a modified sulphate process combined with a two-stage chlorination hypochlorite bleach. They find that long leaf pine gives fully as good results as loblolly pine and have produced wrapping, bond, writing, book and glassine papers from the long leaf pine pulps.

Martin, Bray and Curran *(62)* have studied the critical pulping temperatures for the sulphate process and find no optimum or critical temperature for the kraft pulping.

Bray and Curran *(63)* report on the influence of chemical concentration in the alkaline pulping process and show that an increase in the concentration of chemicals increases the rate of delignification of wood and affects the decomposition of cellulose and alpha-cellulose content of the pulp. For the production of kraft pulp, concentration shows but little influence either on strength or color although decreasing concentration has a beneficial effect in increasing the yield of screened pulp.

Kress and McGregor *(64)* studied the influence of sulphidity on the physical and chemical characteristics of kraft pulp and conclude that under the conditions chosen there are fairly narrow limits as to the ratio of caustic to sulphide for good yields of acceptable pulp.

Davis *(65)* describes an alkaline process for obtaining high yields of pulp from aspen wood which process consists of alkaline digestion with a low percentage and concentration of alkali followed by a first stage chlorination, an alkaline wash, and a final hypochlorite bleach.

Hydration

A very comprehensive review of the current theories in regard to the effect of beating on cellulose fibers has been presented by J. d'A. Clark *(66)*, who has made an attempt to bring these together through a composite theory. He presents evidence to show that cellulose is subject to partial solution when wet with water and one result of this partial solution is the production of a mucilage which is active in sheet formation. Young and Rowland *(67)* continue the work on hydration at the Institute of Paper Chemistry with a paper on the relation between hydration capacity and pentosan content of soft wood pulps, the so-called hydration capacity being measured by means of a dilatometer. Evidence is produced to show that a linear relation exists between the swelling tendency and the pentosan content of a number of soft wood pulps.

Bleaching

Lewis and Kukolich *(68)* discuss the possibility of measuring the pH of solutions containing chlorine or hypochlorites and conclude that, while this may be done with certain indicators to a fair degree of satisfaction, the best method for the measurement of pH of solutions involves the use of the glass electrode.

Kress and Davis *(69)* have studied the bleaching of kraft pulp on an experimental scale and discuss this operation in reference to quantity, quality and chlorine consumption of the pulp. Kress and Voigtman *(70)* have carried on a similar study of the variables influencing the chlorination of Mitscherlich sulphite pulp; these include concentration, time, temperature and amount of chemicals. They also report on the action of chlorine on isolated lignins.

Rue and Sconce *(71)* describe a two-stage bleaching op-

eration for bleaching of kraft pulp, the first stage of which consists of direct chlorination for a period of five minutes, alkalizing with lime and allowing the remaining chlorine to exhaust. The second stage is a typical hypochlorite bleach. They also describe a similar operation for the improvement of the quality and manufacturing processes of bleached sulphite pulp *(72), (73)*.

The use of bisulphites and hydrosulphites as bleaching agents for ground wood, an operation which is carried out to a considerable extent on the west coast, has been outlined by Hirschkind *(74)*.

Sizing

Bialkowsky *(75)* has studied the rate of hydrolysis of sodium abietate at beater concentrations and finds this to be quite low in the absence of pulp, while in the presence of pulp it is much higher. The adsorption of alkalis by the pulp and sodium abietate hydrolysis are closely related for each pulp.

Rowland *(76)* discusses the problem of rosin sizing from the point of colloid chemistry and Croswell, Dreshfield and Heller *(77)*, that of laboratory determinations of beater sizing. Dreshfield *(78)* critically surveys various rosin sizing methods and believes that saponified dry rosin size will continue to be the fundamental sizing material. Hall *(79)* shows that a water-soluble substance secreted with the oleoresin of southern turpentine pines is very susceptible to oxidation at lower temperatures and decomposes at higher temperatures. The presence of this water-soluble material is responsible for high color in rosin and its removal by washing during steam distillation results in the production of rosins of considerably lighter color. Healy and Dyer *(80)* have carried on rosin sizing of paper at high pH's and low acidities through the use of a combination of alum and sodium aluminate in place of the alum ordinarily used.

Rowland *(81)* discusses colloidal control in starch sizing and outlines the procedure for adding the starch to fiber furnish by precipitating the starch with alum after hydration is completed in the beater or in the jordan. Chilson, Simmonds, Baird and Curran *(82)* have studied the influence of stock temperature and hydrogen-ion concentration on a kraft paper sized with a special starch and point out the relation between hydrogen-ion concentration and the tearing, the bursting and the tensile strength of the product.

Cobb, Chamberlin and Dombrow *(83)* describe an emulsified paraffin wax.

Sheet Properties

One of the extremely interesting industrial developments in the field of pulp and paper during the last year or two has been that of the manufacture of light weight paper of high opacity by the addition of zinc and titanium pigments. The properties of paper pigmented with zinc sulphide have been described by Cyr *(84)* and the use of zinc pigments by Kress and Cyr *(85)*, who find that zinc sulphide pigmented papers have an excellent opacity, whiteness, brightness and printing surface. At the same time the presence of the zinc pigments acts as a deterrent on slime formation. Willets *(86)* has used titanium pigments for the same purpose.

The fundamental study of the Forest Products Laboratory on sheet properties has been continued. Doughty *(87)* discusses the relation of sheet properties and fiber properties in paper from physical test data on spruce and black gum sulphite pulps. Doughty, Seborg and Baird *(88), (89)* in the fourth paper in a series on the volumetric composition of paper, describe an easily operated porosity tester and in the fifth paper consider the effect of solid fraction and thickness on the porosity and air transmissibility of simple papers. In an additional paper, Doughty *(90)* applies the use of structural concepts in pulp evaluation and paper design. Simmonds *(91)* considers the capillary rise of water in fibrous sheets and Schafer *(92)* the effect of white water on sheet properties. Brown *(93)* has likewise paid attention to the effect of fiber length on pulp and sheet properties and has shown that from a paper making standpoint, fiber length has no effect on slowness, shrinkage, porosity, springback or color.

McKee and Shotwell *(94), (95)* at Columbia University have been interested in the rate of moisture regain in paper and the control of moisture in paper. They *(96)* also describe the temperature effects on the equilibrium between paper moisture content and humidity.

Of interest to manufacturers of coated papers are the articles of McCarron and Rowland *(97)* and Whittier, Gould and Hall *(98)*. In the first paper, the influence of particle size distribution in clays on hand sheet and coating characteristics has been considered, the particle size being determined by means of a sedimentation balance. The second paper deals with the nature of clay-casein slips for paper coating. The authors have interested themselves in determining the causes of foaming of casein solutions and outlined various factors of importance.

Permanence

An active interest in the permanence of paper has been manifested during the past few years. The Rag Content Paper Manufacturers have established a fellowship at the Institute of Paper Chemistry to carry on a fundamental investigation of the relative stabilities of various types of rag and purified sulphite pulps. Two reports have appeared on this fellowship. In the first, *(99)* the various stocks and pulps selected have been degraded by such agents as heat and alkaline solutions in the presence of air, nitrogen and oxygen, acid solution and light. Changes have been followed by measurement of α-, β- and γ-cellulose, pentosan, copper number and viscosities. In the second report, *(100)* a similar study has been carried out in which the selected stocks have been degraded with strong calcium hypochlorite solution. Data are presented which indicate that high-grade rag stocks resist chemical degradation to a greater degree than do low-grade rag stocks and highly purified sulphite pulps, and, consequently, other effects being equal, papers made from such high-grade rag stocks should last longer than papers made from low-grade rag stocks or from purified sulphite pulps.

The development of an accelerated ageing test for measuring the relative permanence characteristics has been continued at the Bureau of Standards. Rasch and Stone *(101)* describe their work with such tests and recommend the measurement of the loss in folding endurance after heating paper in a current of air at 100 deg. C. Rasch, Shaw and Bicking *(102)* have studied the factors influencing the strength and stability of experimental papers made from sulphite pulps and their results indicate that the stabilities of rosin-sized sulphite sheets, measured by the accelerated ageing test, are not closely related to the amount of rosin present; an improvement in stabilities results from the careful control of the acidity of rosin-sized papers. In the same way, these stabilities are slightly improved by glue sizing, although for optimum stability, they recommend that the alum in the tub sizing bath be kept at the minimum necessary to preserve the glue. Rasch and Scribner *(103)* have compared the strength and chemical constants of a series of papers after four years of normal ageing against the original behavior in the Bureau of Standards accelerated ageing test and find the papers placed

in approximately the same order. They state "that the most significant relation of the initial properties of these papers to their weakening during storage and likewise under the heat test was the purity of the fibers as measured by α-cellulose content and copper number." Exceptions were the soda sulphite book papers of low original strength.

Jarrell, Hankins and Veitch *(104)* studied the effect of inorganic acids on the physical properties of water-leaf rag bond paper. They find that the untreated papers may be oven aged for 72 hours at 100 deg. C. without change in folding endurance, bursting strength or color. Papers which have been treated with small quantities of hydrochloric acid, sulphuric acid or alum, however, are, when oven aged, rapidly deteriorated.

Wehmer *(105)* has determined the effect of the volume of fresh air in this accelerated ageing test and presents data to show that variations in the intake of fresh air are without significant effect.

Torrey and Sutermeister *(106)* have studied some old papers and believe that the chemical characteristics of the papers as a whole rather than the fibrous portions only are responsible for their permanence or lack of permanence. They are not convinced that a high α-cellulose content is necessary for paper to last a long period of time and consequently feel that specifications based chiefly on this test may be misleading. Minor *(107)* considers the permanency of paper as related to sizing and acidity and presents data to indicate that the rosin content of a sheet is a prominent factor in the degradation of paper, while tub sizing with animal size is equally prominent in its protection, although the acidities of similarly degraded papers bear no relation to the loss in folding strength.

Of general interest is an abstract of a report *(108)* prepared by the League of Nations relating to the permanence of papers. A circular was sent to the national commissions throughout the world, asking for their experience and suggestions in regard to the preservation of printed materials and manuscripts. The answers received from the different countries indicate that valuable World War documents are already in bad state of preservation due in part to the paper and in part to the ink used. Recommendations and specifications for permanent papers are appended.

Chemical Testing

The various testing committees of the Technical Association of the Pulp and Paper Industry have been extremely active during the past two years in developing standard methods for testing pulp and paper and materials used in the manufacture of pulp and paper. Tentative standard methods have been proposed and outlined for the following determinations: Cuprammonium viscosity, *(109)* methoxyl groups in wood or pulp, *(110)* pitch in wood pulp, *(111)* one per cent caustic solubility of pulp, *(112)* one per cent caustic soda solubility of wood, *(113)* ash in pulp, *(114)* soda ash, *(115)* sodium hydroxide, *(116)* lime, *(117)* coal, *(118)* casein, *(119)* acidity of paper, *(120)* water, *(121)* water resistance of paper, *(122)* salt cake, *(123)* copper number of paper, *(124)* moisture in pulp lap, wood chips and sawdust by xylene treatment, *(125)* limestone, *(126)* α-cellulose in paper, *(127)* time of ink absorption of blotting paper, *(128)* and the rate of absorption of water by bibulous papers. *(129)* In addition to these, Reuben *(130)* has discussed the value of cuprammonium viscosity in pulp evaluation and Coster *(131)* for mill control of pulp. Grand and Billing *(132)* propose the use of glass spheres for viscosity determinations. Lewis and Browning *(133)* have carried out a very thorough study of the possible variables in the determination of α-cellulose and suggest certain changes in the method for the determination of α-cellulose in pulp as recommended by the Cellulose Division of the American Chemical Society and the Testing Committee of TAPPI. Willets *(134)*, *(135)* comments on the official standard testing method of TAPPI. Piper and Fellows *(136)* propose minor modifications in the Braidy method for the determination of copper number of paper. This value is used as an indication of the amount of deterioration of oil impregnated paper used as an insulation for underground cables. Iddles and Robbins *(137)* have compared the different methods for determination of pentoses and pentosans in plant materials. Snyder and Hansen *(138)* discuss the technique in chemical analysis of casein. Sutermeister *(139)* outlines a method for the analyzation of coated paper and with Torrey *(140)* recommends the substitution of sulphuric acid for acetic acid in the TAPPI determination of rosin in paper. Steele *(141)* suggests a way of estimating zinc sulphide in paper. Heath, Bray and Curran *(142)* go into the analysis of black liquors of varying sulphidity by ammonia distillation method. Heath *(143)* outlines an improved method for the analysis of spent "black" liquors from the soda and kraft processes. Lauer and Youtz *(144)* carried on a number of analyses of wood using the 40-60 fraction rather than the 60 to 80 mesh fraction and obtained reproducible results. Codwise *(145)* proposes an abridgement of the dry indicator method for testing "over all size resistance." Clark *(146)* and Clark, von Hamzburg and Knoll *(147)* outline a new method for estimating dirt and shives in pulp and paper. Simmonds, Billington and Baird *(148)* have modified the various methods for making dirt counts in pulp and paper.

Libby and Parkinson *(149)* recommend the measurement of the blood resistance of butchers' wrapping paper by applying blood serum to the surface in an Abrams Penescope Tester. They state that "the rate of blood serum absorption by the paper is directly proportional to the rate of absorption of meat juice and blood."

Somewhat related to the field of chemical testing as well as that of the nature of cellulose is work carried out by Gortner and McNair. *(150)* These men have investigated the nature of the α-cellulose in bleached sodium hydroxide and sodium sulphite pulps from various wood sources. They find that the percentages of α-cellulose in a given pulp after successive α-cellulose treatments fall on straight lines and that the slope of the line is characteristic for the pulps. This slope indicates the angle of degradation which is affected both by the botanical source of the wood and by the cooking procedure used.

Physical Testing

The subject of the measurement of pulp color, of paper color and opacity has received attention. L. C. Lewis *(151)* presents a comprehensive discussion of the pulp color measurement. Hatch and Hauff *(152)* describe the use of the Razek-Mulder color analyzer in the measurement of pulp or paper color. Forrest *(153)* discusses a new color comparator developed by the Bausch & Lomb Optical Company, utilizing the Maxwell rotating disc procedure in connection with the Munsell color system. Davis *(154)* and Forrest *(155)* tell about a new and simple photo-electric opacity tester. Rafton *(156)* gives a method for measuring opacity and whiteness for paper coating pigments embodying the obscuring principle. Wehmhoff, Simmons and Boyce *(157)* present data on the Bekk smoothness tester as an aid in studying the printing quality of paper. They find that the tester gives a numerical measure of smoothness of paper surfaces, reproducible within the limits of experimental error and find these tests to be of value in testing printing qualities. Schiefer *(158)* describes the compressometer, an instrument for

evaluating the thickness, compressibility and compressional resilience of textiles and similar materials. Scribner and Snyder *(159)* outline a study of physical properties of binders board, in which study they made bursting, tensile and flexural-strength tests of commercial samples of binders board. They conclude that the flexural-strength test is the most suitable because of its duplication of service stresses and its superior accuracy. A modification for standard tearing test of paper is described. *(160)*

Peterson and Kolesinskas *(161)* have studied the effect of weight variation in the strength testing of wood pulp in the pebble mill and show that a longer time is required to reach maximum burst when weight and number of porcelain balls is increased. The tearing strength and freeness values tend to decrease with an increase in weight of pebble charge and vice versa. They show that the freeness test may be a good index of the beating time required to obtain maximum strength. Schwalbe *(162)* compares the various pulp testing and specification procedures and shows that many discrepancies in the various methods can be adjusted without radical or costly changes. Doughty and Curran *(163)* present a comprehensive study of sheet machines for pulp evaluation. Seborg, Doughty and Baird *(164)* describe the effect of relative humidity on the moisture content and bursting strength of container board. The relative humidity studied ranged all the way from 0-97 per cent. An interesting relationship developed is that, when the sheets were brought to a relative humidity of 90 per cent, a marked permanent increase in strength was noticed.

Research Survey

In conclusion, a very interesting series of papers by Wise describes recent researches in pulp and paper making in Japan, *(165)* Great Britain, *(166)* France and Italy, *(167)* and also survey the general development in the fields of lignin, cellulose and hemi-cellulose. *(168)*

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TAPPI Notes

All manuscripts for the fall meeting of TAPPI must be submitted to the Secretary's Office, 122 East 42d street, New York, prior to August 13.

All planning to attend the TAPPI Fall Meeting should make railroad reservations with G. S. Brazeau, Weyerhaeuser Timber Company, 307 North Michigan avenue, Chicago, Ill., and hotel reservations direct with the Multnomah Hotel, Portland, Ore. Since a record-breaking attendance is expected these reservations should be made at once.

O. R. Steffens, formerly of Penick & Ford Sales Company, is now with the Indiana and Illinois Coal Corporation of Nokomis, Ill.

R. A. Campbell, formerly chemist for the Container Corporation of America, Carthage, Ind., is now with the U. S. Gypsum Company, Gypsum, Ohio.

M. W. Phelps, formerly chief chemist at the Camas (Wash.) mill of the Crown-Willamette Paper Company, is now assistant mill manager of Pacific Mills, Ltd., Ocean Falls, B. C.

Eric Wahlforssis is now technical director of the Glidden Soya Products Co., Cleveland, Ohio.

Norman Clark, formerly of the Standard Paper Manufacturing Company, Richmond, Va., is now with Louis Dejonge & Co., Stapleton, N. Y.

Scientific Lubricants Co. Move

Scientific Lubricants Company, manufacturers of Motor Mica and Motor Mica Lubricants, have moved to new and larger quarters at 3462 North Clark street, Chicago, Ill. Increase in business has made this move possible.

New TAPPI Members

The executive committee of the Technical Association of the Pulp and Paper Industry has announced that the following have been elected to membership:

David M. Borden, chief chemist, Miami Valley Coated Paper Company, Franklin, Ohio, is a 1924 graduate of the University of Cincinnati and has had previous paper mill experience with the Sorg Paper Company, Middletown, Ohio, and the Champion Coated Paper Company, Hamilton, Ohio.

Alastair Grant, sales manager Pulp and Paper Mill Accessories, Ltd., Montreal, P. Q., attended Ridley College, St. Catherines, Ont., and Ashbury College, Ottawa, Ont., and was formerly in the operating department of the International Paper Company, Three Rivers, P. Q.

J. P. Hagenauer, consulting engineer, New York, N. Y., has been advanced from the associate to the active grade in the Technical Association.

John P. Hines, assistant engineer and draftsman, Hawley Pulp and Paper Company, Oregon City, Ore., is a 1932 mechanical engineering graduate of the University of Washington and was formerly with Stephens-Adamson Manufacturing Company, Los Angeles, Cal.

Norman G. Johnson, research chemist, E. I. du Pont de Nemours & Co., Inc., Gibbstown, N. J., is a 1925 graduate of the University of Washington.

Matthew Maughan, 1932, New York State College of Forestry, Syracuse, N. Y., graduate, was formerly employed by the Racquette River Paper Company, Potsdam, N. Y.

Earl P. McGinn, technician, U. S. Forest Service, Park Falls, Wis., is a 1932 graduate of Syracuse University and was formerly employed by the Seabright Company, Fulton, N. Y.

Neil F. Robertson, chemist, Pulp Bleaching Corporation, Orange, N. J., is a 1928 graduate of Olivet College and was formerly employed by the Kalamazoo Vegetable Parchment Company, Parchment, Mich.

Otho L. Thomas, technologist, the Grasselli Chemical Company, Grasselli, N. J., is a 1914 graduate of Gettysburg College and has been employed in several of the plants of E. I. du Pont de Nemours Company.

The following members were recently reinstated:

Erik Andersen, assistant sales manager, Pulp and Paper Trading Company, New York.

A. E. Montgomery, sales engineer, J. O. Ross Engineering Corporation, Chicago, Ill.

Harry E. Fletcher, vice-president and general manager, Fletcher Paper Company, Alpena, Mich.

C. R. P. Cash, chief chemist, St. Helens Pulp and Paper Company, St. Helens, Ore.

Deerfield Glassine Reorganization

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., July 31, 1934.—A petition for reorganization under the new bankruptcy amendment has been filed in the federal court by the Deerfield Glassine Company, of Monroe. Fixed assets were revealed at $1,708,742 and current assets at $261,530.

The company was incorporated in 1926 at Delaware and in December, 1930, Charles N. Stoddard, of Greenfield, was appointed permanent receiver.

The firm is engaged in the manufacture of glassine paper, with a mill, land, machinery and other equipment in Monroe.

The petition reports liabilities of $1,062,241 before the receivership.

The company wants Mr. Stoddard named trustee.

Evaluation of Southern Pines For Pulp Production

III. Shortleaf Pine *(Pinus echinata)*

By Mark W. Bray[1] and Benson H. Paul[2]

Abstract

Three silviculturally different lots of shortleaf pine (Pinus echinata) were evaluated at the Forest Products Laboratory for their suitability for pulping. The logs comprised both slow- and rapid-growth wood as well as slow-growth wood both with and without heartwood. Chemical analysis of the three lots showed no outstanding evidence adverse to the production of good quality pulps of average yields. The yield of kraft pulp, of cellulose, and of alpha-cellulose per cord, decreased with increase in taper and growth-rate.

This paper, which is the third of a series (*1*) (*2*) covering the southern pines, deals with the evaluation at the Forest Products Laboratory of the wood of the shortleaf pine for pulp production. The evaluation includes a correlation of forest conditions with the properties of the wood which affect its pulping quality and also the yield of pulp obtainable.

Description of Stands

The shortleaf pine in this study was obtained from three second-growth stands in the Ouachita National Forest, Arkansas. The stands were selected with a wide range in age, stocking, and rate of growth of the trees. (Fig. 1.)

Stand No. 1 was 45 years of age. It contained 560 trees per acre over 4 inches in diameter at breast height. The average diameter of the trees was 8 inches and the maximum diameter 11 inches. Most of the trees were tall and straight with smooth trunks. The dominant trees of the stand average 65 feet in height. The initial growth in diameter of these trees had been fairly rapid but the rate of growth had declined considerably during the last 30 years. An under story of young oak sprouts 4 to 6 feet in height gave indication of the burning of the forest area a few years previously. Thirty-two trees ranging in size from 6 to 11 inches in diameter at breast height were cut in this stand for study. The merchantable pulpwood length of the trees cut ranged from 30 to 40 feet. In order to allow sampling in addition to the regulation 4-foot cordwood lengths, the trees were cut into 9-foot lengths for shipment.

Stand No. 2 was an old field stand 25 years of age and densely stocked with 1,310 trees per acre. The presence of double trees in the stand indicated that when the stand was very young a fire had killed back many of the trees. No severe fires had occurred in recent years. The trees in this stand ranged from 3 to 8 inches in diameter at breast height and averaged about 6 inches. A fairly rapid rate of growth had been maintained up to the present cutting. The dominant trees averaged about 45 feet in height and the merchantable pulpwood length of the trees ranged from 24 to 36 feet. The formation of heartwood was just beginning in the trees. Sixty-four trees ranging from 5 to 8 inches in diameter at breast height comprised the shipment from this area.

Stand No. 3 consisted of scattered irregular groups or isolated shortleaf pine trees about 15 years of age. The trees in this stand were from 20 to 25 feet in height, with short branchy trunks. The diameter growth of the trees had been rapid, the sizes ranging from 5 to 8 inches in diameter at breast height. On account of the limby condition of the trunks the merchantable pulpwood length was only about 16 to 18 feet. Two 9-foot lengths were taken for study from each of 40 trees cut in this location. The trees of this stand contained no heartwood.

The rate of growth (rings per inch), the percentage of heartwood, and the specific gravity of the wood at different heights in the trees for the three lots of shortleaf pine are given in Table 1. Similar data for three stands of longleaf pine and slash pine are also included in Table 1 for comparison. Curves showing the variation in specific gravity at 4-foot intervals up the shortleaf pine trees and a comparison of the specific gravity of the three lots of wood are presented in Fig 2.

Variation in Specific Gravity

From Table 1 and Fig. 2 it may be seen that in general the wood of shortleaf pine and the other southern pines decreases in weight from the stump upward in the trees. Likewise, second-growth trees of fairly slow growth in well-stocked stands contain heavier wood than trees of very rapid growth in open or partly stocked stands. These differences were first pointed out in earlier studies at the Forest Products Laboratory of the influence of growth conditions upon wood properties (*3*). The specific gravity of the wood influences the yield of pulp per cord of wood, the heavier wood giving a greater yield of pulp.

Heartwood

The percentage of heartwood is influenced primarily by the age of the trees. Usually southern pine trees of any species (*4*) do not form heartwood before they are 20 or more years of age. Later on the percentage of heartwood may be influenced somewhat by the condition of the

[1] Member TAPPI, chemist, Forest Products Laboratory, Madison, Wis.
[2] Silviculturist, Forest Products Laboratory, U. S. Dept. Agriculture, Madison, Wis.

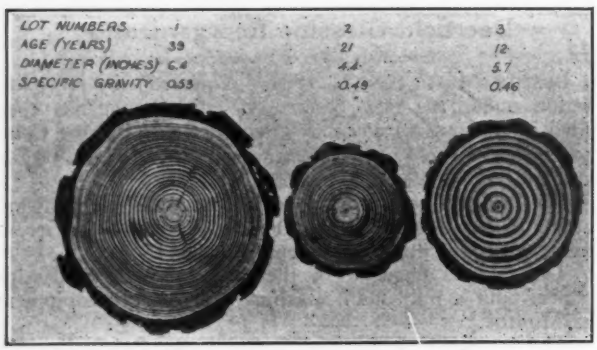


FIG. 1.

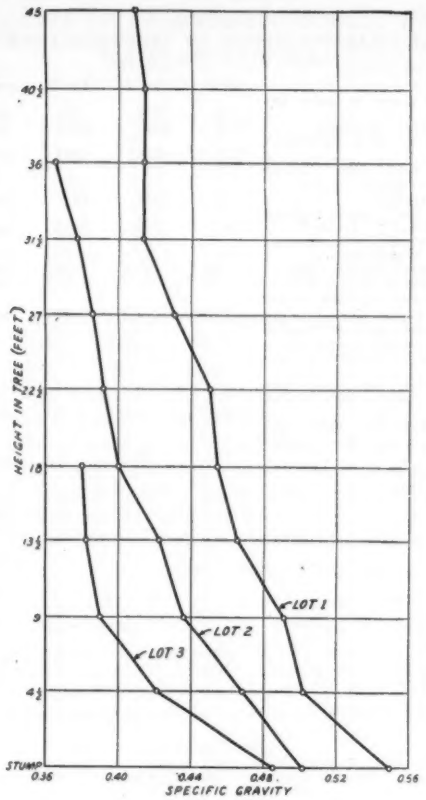
Representative cross sections taken from the three lots of shortleaf pine.

TABLE 1.—SPECIFIC GRAVITY OF SOUTHERN PINE PULPWOOD, RATE OF GROWTH, AND PERCENTAGE OF HEARTWOOD AT VARIOUS HEIGHTS IN THE TREE FOR STANDS OF DIFFERENT SPECIES, AGES, AND STOCKING

Species	Age, years	Number of trees per acre	D.b.h. range, inches	Specific gravity and per cent of heartwood at different heights																					
				Stump		4½ feet		9 feet		13½ feet		18 feet		22½ feet		27 feet		31½ feet		36 feet		40½ feet		45 feet	
				Rings per inch	Per cent heartwood	Rings per inch	Per cent heartwood	Rings per inch	Per cent heartwood	Rings per inch	Per cent heartwood	Rings per inch	Per cent heartwood	Rings per inch	Per cent heartwood	Rings per inch	Per cent heartwood	Rings per inch	Per cent heartwood	Rings per inch	Per cent heartwood	Rings per inch	Per cent heartwood	Rings per inch	Per cent heartwood
Short-leaf pine	45	570	6–11	12.9	6.1	13.6	6.9	13.4	6.5	12.7	6.3	12.8	5.0	12.8	4.3	12.0	3.0	11.0	2.2	10.9	0.9	10.4	0.3	10.2	0
Short-leaf pine	25	1310	5–7	7.8	1.2	8.3	1.9	7.9	1.1	7.2	0.3	6.5	0.1	5.8	0	5.6	0.05	4.8	0	4.2	0	...	...	...	...
Short-leaf pine	13	...	5–7	4.5	0	4.1	0	3.9	0	3.7	0	3.8	0	...	...	...	...	...	...	...	...	...	...	...	...
Slash pine....	30–35	840	5–8	11.4	2.9	12.4	4.6	11.9	5.4	11.4	5.6	11.1	4.7	10.9	4.3	9.9	3.4	10.0	2.7	9.2	1.5	9.0	1.2	...	...
Slash pine....	27	300	6–13	7.1	2.8	6.9	2.7	7.5	5.6	6.8	4.4	7.1	6.0	6.8	3.0	7.1	4.5	6.5	2.1	5.5	2.4	5.8	0	...	...
Slash pine....	8–16	1220	5–10	3.4	0	3.5	0	3.3	0	2.9	0	2.5	0	2.9	0	2.9	0	2.8	0	...	...	...	...	...	...
Long-leaf pine	30–35	1200	4–6	13.2	1.6	13.3	1.7	12.8	3.0	12.6	4.0	12.4	3.4	...	...	...	...	7.8	2.3	7.7	1.0	...	...	...	...
Long-leaf pine	30–35	600	6–9	8.5	1.4	8.7	2.1	8.5	3.0	8.2	3.7	8.0	4.5	...	...	...	...	...	...	...	...	...	...	...	...
Long-leaf pine	25–35[3]	[2] 300	10–14	5.0	5.9	5.1	6.5	5.1	6.5	5.0	7.5	5.0	5.9	...	...	...	...	...	...	...	...	...	...	...	...

Species	Age, years	Number of trees per acre	D.b.h. range, inches	Specific gravity
				45 feet
Short-leaf pine	45	570	6–11	.409
Short-leaf pine	25	1310	5–7	...
Short-leaf pine	13	...	5–7	...
Slash pine....	30–35	840	5–8	...
Slash pine....	27	300	6–13	...
Slash pine....	8–16	1220	5–10	...
Long-leaf pine	30–35	1200	4–6	...
Long-leaf pine	30–35	600	6–9	...
Long-leaf pine	25–35[3]	[2] 300	10–14	...

[1] Scattered, open-grown trees.
[2] Stand not fully stocked.
[3] The higher heartwood content in this group is the result of excessive pitch in the heart of five trees. In 20 other trees of this group the percentage of heartwood was about the same as in the first two groups of long-leaf pine.



VARIATION IN SPECIFIC GRAVITY OF SHORTLEAF PINE

FIG. 2.

Variation in specific gravity of shortleaf pine from stands of different growth rate.

stand, trees maintaining rapid growth until maturity usually contain a higher percentage of sapwood than trees in which the rate of growth becomes greatly restricted as a result of crowding of neighboring trees.

The shortleaf pine stands investigated contained relatively small amounts of heartwood. In stand No. 1 heartwood amounted to only 3 per cent; stand No. 2, less than 1 per cent; and stand No. 3 contained none.

Physical and Chemical Evaluation of Pulpwood[3]

The three silviculturally different lots of shortleaf pine, cut November 9, 1931, were received at the Forest Products Laboratory, Madison, Wis., on November 23. The 9-foot bolts were stored in the open until December when they were evaluated separately according to the standard procedure at the Laboratory (*5*). Before filling the 4 by 4 by 8-foot cord rack, the logs were sawed into 4-foot lengths. During this procedure, in addition to selecting discs from various tree heights for the specific gravity measurements just reported, representative logs from each lot were set aside as samples for use in determining physical and chemical properties. These sample logs were also selected with reference to tree height so as to be representative of the entire lot under consideration.

The physical evaluation data are reported in Tables 2 and 3 and the chemical data in Table 4.

Discussion of Physical and Chemical Evaluation

The wood in all three lots was in sound condition upon

[3] The evaluation of the pulpwood was made by J. S. Martin and S. L. Schwartz, the chemical analysis by E. S. Lewis.

TABLE 2
PHYSICAL CHARACTERISTICS OF SECOND-GROWTH SHORTLEAF PINE PULPWOOD

	Lot 1	Lot 2	Lot 3	Unit of measurement
Number of pieces in cord, unbarked	118	159	155	pieces
Weight of cord, unbarked	5763	5669	5713	pounds
Weight of cord, after barking as received	5207	4994	4903	pounds
Weight of cord, after barking oven-dry (weight peeled × oven-dry factor)	2480	2038	1917	pounds
Weight of cord, after barking (solid volume × density)	2480	2018	1895	pounds
Solid wood content, after barking by water displacement	85.5	77.4	73.9	cubic feet
Loss in weight of bark (logs)	9.6	11.9	14.2	per cent
Loss in volume of bark (discs)	11 4	14.3	17.6	per cent
Loss in weight of bark (discs oven-dry basis)	10.2	12.5	15.7	per cent
Average specific gravity (weight, oven-dry/volume green)	.457	.418	.411	
Average specific gravity (oven-dry)	.511	.464	.446	
Average weight per cubic foot (weight, oven - dry / volume green)	28.5	26.1	25.7	pounds
Average weight per cubic foot (weight, oven - dry / volume oven-dry)	31.9	29.0	27.8	pounds
Average moisture in material as received (discs)				
Unbarked	51.5	57.6	59.2	per cent
Barked	52.4	59.2	60.9	per cent
Bark	41.4	42.0	47.2	per cent
Maximum diameter of barked logs	8.8	6.9	6.8	inches
Minimum diameter of barked logs	3.4	3.1	2.7	inches
Average diameter of barked logs	5.7	4.7	4.7	inches
Average diameter of discs	5.6	4.6	4.6	inches
Average ring count of discs in representative sample[1]	30.4	15.5	8.7	annual rings
Growth rate (rings per inch)	10.9	6.7	3.7	rings
Ratio of heartwood to total	2.9	.6	0	per cent

[1] This figure will differ from the age of the tree measured on the stump.

TABLE 3.
WEIGHT, MOISTURE CONTENT, AND VOLUME OF ⅝-INCH SECOND-GROWTH SHORTLEAF PINE CHIPS

	Lot 1	Lot 2	Lot 3	Unit of measurement
Weight of wet chips, as received	34.2	35.6	36.1	pounds
Moisture content	51.5	56.8	59.9	per cent
Volume of container	1.5	1.5	1.5	cubic feet
Weight per cubic foot of wet chips	22.8	23.7	24.1	pounds
Weight per cubic foot of oven-dry chips (Volume determined when green)	11.0	10.2	9.7	pounds

TABLE 4.
CHEMICAL ANALYSIS AND COLOR DATA OF SECOND-GROWTH SHORTLEAF PINE PULPWOOD (BASED ON THE WEIGHT OF OVEN-DRY WOOD)

	Lot 1 Per cent	Lot 2 Per cent	Lot 3 Per cent
Lignin (ether extracted wood)	29.1	29.1	28.9
Lignin (alcohol-benzene extracted wood)	28.0	28.1	28.1
Total cellulose	59.5	59.2	57.8
Alpha-cellulose	45.2	43.4	41.4
Total pentosans	13.0	14.2	14.7
1 per cent NaOH solubility	11.9	13.9	13.7
Hot water solubility	2.4	2.3	3.1
Alcohol-benzene solubility	3.2	3.0	4.9
Ether solubility	1.5	1.6	2.8
Hydrolysis number	21.9	22.4	23.5
HESS-IVES COLOR READINGS			
Sapwood	Parts	Parts	Parts
Red	71	74	80
Green	51	57	60
Blue	40	46	49
Heartwood[1]	..	..	..

[1] The amount of heartwood in each of three lots was insufficient for color readings.

arrival at the Forest Products Laboratory and throughout the tests. Many of the logs were crooked and a relatively high percentage of the 4-foot bolts contained knots of various sizes. In the young material of rapid growth many of the knot swellings protruded beyond the general contour of the bolt so that the volume of solid wood in the racked cord was reduced materially.

The racked cords of the wood in lots 1, 2, and 3 contained 118, 159, and 155 four-foot bolts, which averaged 5.7, 4.7, and 4.7 inches in diameter, respectively. The very knotty bolts in the three lots constituted in order, 40.7, 41.5, and 71.6 per cent of each cord, while 16, 9, and 29 per cent of the sticks, respectively, were very crooked. Although the weight of the wet, unbarked wood in the racked cord was approximately 5,700 pounds for each of the three lots, considerable difference in the weight of oven-dry barked wood for the several racked cords may be noted in table 2. Owing to the barking and other losses, the weight of oven-dry wood substance in the racked cord of young, rapid-growth material was approximately 600 pounds less than that of the more mature slow-growth material. As shown later, this difference was reflected in a corresponding decrease in yield of pulp per cord. The average ring count of the three lots of wood in the racked cords obtained from measurements made on selected sample logs was 30.4, 15.5, and 8.7 annual rings, respectively. Since these measurements were made at various points up the tree, they are not a true record of the age of the stand but are indicative of the average age of the material evaluated. The growth rates of the three lots measured in the foregoing manner averaged 10.9, 6.7, and 3.7 rings per inch, respectively.

The specific gravity of the three lots of wood in the racked cords, calculated from the weight when oven-dry and the volume of the green discs, averaged 0.457, 0.418, and 0.411, respectively. Although the racked cords of lots 2 and 3 do not show a marked difference in average specific gravity, the logs measured for lot 2 included material from higher up in the bole, which was of lower density than the logs in the lower portion of the trees in lot 3. (See Fig. 2.) These average specific gravity values correspond to densities of 28.5, 26.1, and 25.7 pounds per cubic foot, respectively. These values vary considerably when the specific gravity is measured at various heights of the bole as shown in Table 1. The weight per cubic foot of oven-dry chips, in accord with the density measurements, decreased as the growth rate increased. (Table 3.) This decrease in weight of wood per unit volume decreased the yield of pulp per unit of digester space.

Chemical analysis of representative samples of the three lots showed very little variation in the lignin content of the wood, but the total cellulose and the alpha-cellulose were lower (59.5, 59.2, and 57.8 per cent total cellulose, respectively) in the younger and more rapid-growth material. On the contrary, the total pentosans and the resistance of the wood to the solvent action of both water and dilute alkalies and also to organic solvents increased with rate of growth. With the exception of the lignin values, the chemical data, in general, tend to emphasize the findings of the physical evaluation in indicating a decrease in pulp yield with increase in growth rate.

Except for the values obtained from the extraction with organic solvents the data resulting from the chemical analysis of lot 1 are not dissimilar to previously recorded data for spruce (*6*). In general, the chemical data for the three lots of shortleaf pine compare favorably with similar data from the other southern yellow pines (*2*) (*3*) (*6*) of similar growth rate.

Pulping Experiments

Tests for comparing the pulping properties of the three lots of shortleaf pine were made by the sulphate "kraft" process. In this process wood chips are reduced to pulp at relatively high temperature and pressure with a mixture of sodium hydroxide and sodium sulphide (usually in a ratio of approximately 2 to 1, respectively) in water solution.

Three such digestions were made under identical conditions on standard ⅝-inch chips, representative of each of the three lots of pulpwood. The following cooking conditions were employed for each digestion:

TABLE 5.—SULPHATE PULP, CELLULOSE, AND ALPHA-CELLULOSE YIELD DATA ON THREE SILVICULTURALLY DIFFERENT LOTS OF SHORTLEAF PINE

Lot Number	Average specific gravity	Average density	Solid wood content of cord	Average weight of peeled wood per cord of unbarked wood (oven-dry)	Weight per cubic foot of oven-dry chips	Yield of kraft pulp: Screened	Yield of kraft pulp: Total	Yield of kraft pulp: Screened per cord of unbarked wood	Cellulose: Total in oven-dry wood	Cellulose: Weight per cord of unbarked wood	Cellulose: Weight per cubic foot of oven-dry chips	Alpha-cellulose: In oven-dry wood	Alpha-cellulose: Weight per cord of unbarked wood	Alpha-cellulose: Weight per cubic foot of oven-dry chips
		Pounds per cubic foot	Cubic feet	Pounds	Pounds	Per cent	Per cent	Pounds	Per cent	Pounds	Pounds	Per cent	Pounds	Pounds
1	0.457	28.5	85.5	2480	11.0	46.6	47.5	1155	59.5	1475	6.6	45.2	1122	5.0
2	.418	26.1	77.4	2028	10.2	45.2	47.8	916	59.2	1200	6.0	43.4	880	4.4
3	.411	25.7	73.9	1906	9.7	44.8	49.9	855	57.8	1103	5.6	41.4	790	4.0

Maximum digestion temperature .....170° C.
Temperature and pressure increase period .....1½ hours
Duration at maximum temperature .....1½ hours
Ratio of sodium hydroxide to sodium sulphide in cooking liquor .....2 to 1
Total chemical per hundred pounds of oven-dry wood charged .....20 pounds
Total concentration of chemicals in the cooking liquor..86.6 grams per liter
Volume of cooking liquor at the start per hundred pounds of oven-dry wood charged .....27.7 gallons

The yields of pulp expressed both in percentage and in pounds per cord of wood, are given in Table 5. For comparison this table also shows the available cellulose and alpha-cellulose possible in both a cord and in a cubic foot of each of the pulpwoods.

Discussion of Pulping Experiments

Like longleaf pine (*2*) (*3*) the lowest yields of pulp, of cellulose, and of alpha-cellulose were obtained from the wood grown in wide-spaced areas in the forest, a condition conducive to a rapid rate of growth. Such results would be expected from a review of the chemical and physical data. These observations are in line with those obtained on foreign woods by Klemm (*7*).

Strength tests on the kraft pulps prepared from slow- and medium-growth wood showed a slight advantage over the tests for the pulps from the fast growth material as regards bursting, tensile, and tearing strengths. In folding endurance, however, the fast growth material had a slight advantage. The few digestions made preclude any hard and fast conclusions being based on these observations, although other work shows a slight trend in favor of pulps from slower growth material. These trends are, however, not based upon pulping conditions particularly designed for rapid-growth wood and proper adaption of such conditions might well result in pulps of as good or better strength from the rapid-growth material.

Conclusion

In comparing three lots of shortleaf pine, the physical, chemical, and pulping data have shown that the slower-grown, more mature, and less-tapered wood is somewhat better for the production of kraft pulp than that grown in open wide-spaced stands conducive to the most rapid growth in diameter.

Literature Cited

(1) Bray, M. W. and Paul, B. H. "Evaluation of Southern Pines for Pulp Production. I. The Evaluation of Second-Growth Long Leaf Pine Pulpwood from Trees of Varying Rate of Growth." Southern Lumberman, 141, No. 1793:163 (Dec. 15, 1930).
(2) Paul, B. H. "Evaluation of Southern Pines for Pulp Production, II. Pulp Yield Increased in Judicious Selection of Slash Pine." Paper Ind. 13, No. 2, 1311 (Feb., 1932); Pulp and Paper Can. 32, No. 1:9, 10 (Jan. 7, 1932).
(3) Paul, B. H. "The Application of Silviculture in Controlling the Specific Gravity of Wood." U. S. Dept. Agr. Tech. Bull. 168 (1930).
(4) Paul, B. H. "Heartwood in Second-Growth Southern Pines." Naval Stores Rev. Oct. 18, 1930; Southern Lumberman, Oct. 1, 1930.
(5) "Manual of Standard Testing Methods for Pulpwood, Pulp, Stuff and Paper, Method No. 115." Forest Products Laboratory, Madison, Wis. (Mimeograph).
(6) Curran, C. E. Pulpwood 5, No. 3:5 (March, 1932).
(7) Klemm, Gustav G., Papier-Fabr. 28, Nos. 31, 32, 33:501, 521 (Aug. 17, 1930).

Pulp and Paper Industry Literature Review

Abstracts of Articles and Patents Compiled by the Abstracts and Bibliography Committee of the Technical Association of the Pulp and Paper Industry, A. Papineau-Couture, John F. Ohlson, C. E. Peterson and Clarence J. West, Chairman

Copies of United States Patents can be obtained from the United States Patent Office, Washington, D. C., for 10 cents each. Send currency, not stamps.

Bleaching

Apparatus for Bleaching Pulp. Mathew F. McCombs assignor to Niagara Alkali Co. U. S. pat. 1,953,022 (March 27, 1934).—The apparatus comprises an outer vertical cylindrical shell having a sump bottom with a valved outlet and a conical false bottom having an orifice in the narrowest part of the cone. An inner shell of smaller diameter has a flat bottom with a central orifice corresponding with the orifice in the cone. The inner shell is formed of vertical staves, some of which do not extend up to the cover of the apparatus. A pump impeller is mounted in the orifice so as to circulate the stock upwardly in the space between the two shells and downwardly inside the inner shell. Chlorine is introduced at a point near the impeller.—A. P.-C.

Arrangement for the Continuous Bleaching of Paper Stock and Similar Materials. Emil Ekeberg, Konga, Sweden. Czech. pat. 43,375. The fibers and the bleach liquor move together through an apparatus in a continuous operation.—J. F. O.

Process for the Bleaching of Fiberous Materials Containing Cellulose. R. Runkel, Weinheim. Ger. pat. 591,-111 (Nov. 29, 1930).—For example; 1160 kilograms of kraft pulp from pine wood are placed in a bleach beater and 47.4 kilograms of sodium hydroxide are added in an hour and at the same time 49.4 kilograms of chlorine are added during 4½ hours. At a certain alkalinity test the pulp is washed and neutralized, after which 27.2 kilo-

grams of chlorine are again added during a period of 4 hours. An excellent white pulp is then obtained.—J. F. O.

Process for the Bleaching of Bast Fibers, Especially Linen, Hemp and Similar Materials in the Form of Yarn and Webs, and also as the Raw Products. I. G. Farbenindustrie Akt. Ges., Frankfurt a.M. Ger. pat. 588,872 (Feb. 27, 1930); addition to Ger. pat. 582,239.—The hydrogen peroxide treatment in the original patent, to obtain partial whiteness, is replaced by steeping in a soda solution.—J. F. O.

Process for Bleaching with Hypochlorites. Gesellschaft für Chemische Industrie, Basle, Switzerland. Ger. pat. 589,774 (Oct. 16, 1931).—It has been found that materials of vegetable origin can be bleached best with hypochlorites, if certain esters are added to the hypochlorite.—J. F. O.

Pulp Purification

Reducing the Solution Viscosity of Cellulose Fiber. George A. Richter assignor to Brown Co. U. S. pat. 1,941,154 (Dec. 26, 1933).—Cotton or wood pulp is digested above 150°C. in a sulphurous acid solution of a sulphite containing no more free than combined sulphur dioxide.—A. P.-C.

Processing of Cellulose Fiber. George A. Richter assignor to Brown Co. U. S. pat. 1,935,580 (Nov. 14, 1933).—Preliberated cellulosic pulp is digested at a temperature above 150°C. in a solution of a soluble borate, aluminate or silicate, to improve its properties for the manufacture of paper, nitrocellulose, etc.—A. P.-C.

Cellulose Fiber of Low Viscosity. George A. Richter assignor to Brown Co. U. S. pat. 1,935,129 (Nov. 14, 1933).—A product which is suitable for viscose manufacture, etc., is prepared by treating cellulose fiber, such as refined wood fiber or cotton, with a solution containing caustic soda and a soluble permanganate under non-mercerizing temperature conditions, and then under mercerizing temperature conditions.—A. P.-C.

High Alpha Pulp. Francesco C. Palazzo and Fortunato Palazzo. Brit. pat. 398,730 (Sept. 21, 1933).—Sulphite pulp is treated in an autoclave with a liquid containing 1 to 1.5 per cent caustic soda and 0.2 to 0.3 per cent colloidal emulsoid sodium salt, stable to alkali, at 1 to 2 atmospheres for 1 to 2 hours. Sodium soaps of higher fatty acids may be used. The treatment removes hemicelluloses, fats and resins. Complete removal of residual lignin components is effected by a mild oxidizing treatment in two stages, first in a weakly alkaline and then in a weakly acid medium.—A. P.-C.

Sizing

Practical Values of Various Sizes. Mitsunori Higaki. Cellulose Ind. (Tokyo) 9: 275-281 (1933).—Of rosin, soy-bean oil, tallow, lard, sodium aluminate, etc., examined for sizing effects, soy-bean oil, tallow and lard are inferior to rosin. If paper sized with soy-bean oil, tallow or lard is dried at a somewhat higher temperature, the sizing effect is stronger than that of rosin; these sizes can therefore be satisfactorily used for paper of ordinary quality. The addition of lard to rosin results in a considerable lowering of the melting-point of the latter; sizing can, however, scarcely be effected because the emulsified size is electrically inactive; such a size is therefore unfit for engine sizing. The pH and temperature bear a certain intimate relation to gelatinization or coagulation of size.—A. P.-C.

Several Little Known Uses for Viscose. Helmut Hoffmann. Papier-Fabr. 31, No. 38: 497-500 (Sept. 17, 1933).—By means of several references the author describes various little known uses for viscose, such as the sizing of paper, for the finishing of materials, preservation of cheese, manufacture of artificial sausage skins, and viscose sponge. The method for its use as well as advantages and disadvantages are stated.—J. F. O.

Rosin Size. Judson A. DeCew assignor to Process Engineers, Inc. U. S. pat. 1,929,577 (Oct. 10, 1933).—Melted rosin is emulsified with a dilute aqueous alkaline solution such as caustic soda under conditions unfavorable for the saponification of the rosin, and the emulsion formed is separately treated in a container without dilution and at a temperature below the boiling-point under conditions favorable for saponification of rosin, to produce a lighter colored product than would be obtained by boiling the emulsion.—A. P.-C.

The Handling and Treatment of Size in the Paper Industry. E. Pallas. Papier-Fabr. 31, No. 48: 634-36 (Nov. 26, 1933).—The properties, uses and results as well as the testing of the different types of size are discussed.—J. F. O.

Sizing Paper. I. G. Farbenindustrie A. G. Brit. pat. 395,155 (July 13, 1933).—Paper is sized by adding to the pulp, resins, mineral or vegetable waxes, paraffin or mixtures thereof in the form of an emulsion with mono esters of a carboxylic acid and polyglycerins, the ester itself or by appropriate additions an acid value of at least 2.—A. P.-C.

Process for Surface Sizing. Philip W. Codwise assignor to Certain-teed Products Corp. U. S. pat. 1,937,317 (Nov. 28, 1933).—A size of low penetrating power is applied to the surface of the paper after the sheet has been dried and subjected to a pressure sufficient to so compact the sheet that the sizing applied is for the most part a surface coating.—A. P.-C.

Sizing Paper. Papeteries Navarre. Fr. pat. 750,032 (Aug. 3, 1933).—The pulp is sized before its use for the manufacture of paper. The sizing agents, *e.g.*, an emulsion of paraffin, may be applied to the pulp in suspension in water or while the sheet is in process of formation, or when it is completely formed.—A. P.-C.

Waterproofing or Sizing Paper. Papeteries Navarre. Fr. pat. 749,722 (July 28, 1933).—The application of paraffin, pure or in admixture with products favoring sizing or waterproofing, is carried out in the normal manufacture of paper or cardboard, preferably before the last drying cylinders.—A. P.-C.

Sizing Paper. Antoine C. Gillet. Fr. pat. 751,876 (Sept. 11, 1933).—A stable suspension of colloidal rosin in the presence of a basic resinate (of sodium, potassium or ammonium) or an acid salt, *e.g.*, aluminum sulphate, is used for sizing or waterproofing paper. The rosin is ground in the presence of the solvent which is used in amount such that the mixture forms a paste at ordinary temperature.—A. P.-C.

Sizing Paper. Soc. Anon. Ferdinand Dobler. Fr. pat. 753,871 (Oct. 26, 1933).—A very small amount of an acid substance, preferably a salt of alumina, is added to the pulp before its arrival on the paper machine, and the paper is passed, after a suitable degree of drying according to the quality of the paper, into a rosin-sizing bath, with or without the addition of animal or vegetable glues. The paper is then dried.—A. P.-C.

Rosin Emulsions. Antoine C. Gillet. Fr. pat. 752,970 (Oct. 4, 1933).—Stable emulsions are obtained by saponifying about 15 per cent of the rosin with a mixture of sodium carbonate and bicarbonate, and then saponifying about 10 per cent of the remainder by means of ammonia.—A. P.-C.

Fillers and Coating Materials

Zinc Sulphide Pigments in Today's Paper Industry—Their Incorporation and the Resulting Products. V. A. Belcher. Paper Trade J. 98, No. 11: 37-39 (March 5, 1934).—The use of zinc sulphide pigments to increase the opacity of the sheet permits the use of lighter sheets for mailing. New uses for zinc sulphide pigments include: waxing paper for food wraps, boxboard, absorbent paper, fruit wraps, paper pie plates.—A. P.-C.

Satin White. Edwin Sutermesiter. Paper Ind. 15: 696-698 (March, 1934).—From a discussion of the properties of satin white, it is considered that, in the present state of our knowledge, it seems most likely that it is calcium sulphoaluminate with the formula $3\ CaO.Al_2O_3.3CaSO_4.31H_2O$.—A. P.-C.

Calcium Sulphate as a Paper Filler. E. Belani. Papers-Trävarutid. Finland 16, No. 4: 146, 148-150 (Feb. 2, 1934); Wochbl. Papierfabr. 65, No. 9: 148-149 (March 3, 1934).—Calcium sulphate has been used as a paper filler for many years, even as early as 1400 A. D. The different types of calcium sulphate sold under the trade names of pearl hardening, annaline, lenzin, brilliant white and satin white are briefly mentioned; the various printing processes are described and filling and coating materials resulting in the most suitable printing surface are recommended.—C. J. W.

Use of Titanium Pigments in Paper and Other Cellulose Products. O. Ravner. Pappers-Trävarutid. Finland 15, No. 2: 68, 70-71 (Jan. 31, 1934); Papir-J. 22, No. 1: 7-8; No. 2: 15-16 (Jan. 27, Feb. 15, 1934).—The suitability of titanium pigments for certain types of papers, such as opaque, waxed, greaseproof, bible and other papers, is pointed out. During recent years they have also found application in the rayon, celluloid and similar plastic industries.—C. J. W.

Notes on Casein. Anon. Papier 37; 173177 (Feb., 1934).—A brief outline of its use in sizing and coating paper, of its analysis and detection in coated papers.—A. P.-C.

Process for Lacquering and Impregnating Porous Materials or Fiberous Webs with Artificial Rosin. Bakelite Gesselschaft, m.b.H., Berlin. Ger. pat. 589,071 (Aug. 16, 1927).—The impregnation is done with a product resulting from the mixing of artificial rosin and fatty oils.—J. F. O.

Method for Coating Paper. Charles A. Dickhaut and Charles C. Willis. U. S. pat. 1,942,383 (Jan. 2, 1934).—An excess of coating is applied to paper by means of a roll; all of the coating is removed by means of a second roll; the excess coating is removed from the second roll, and the coating remaining on the second roll is re-applied to the paper.—A. P.-C.

Fillers and Coating Materials

Wallpaper. E. I. du Pont de Nemours and Co. Brit. pat. 394,974 (June 30, 1933).—Washable and grease proof wallpaper is made by coating paper with a composition comprising a cellulose derivative, a sufficient proportion of a waxlike substance or a metal stearate (*e.g.*, zinc or aluminum stearate) to give a matt surface and solvents of the kind used in the preparation of cellulose lacquers. The cellulose derivatives may be esters or ethers; plasticizers and modified natural or synthetic resins may be added to the coating compositions.—A. P.-C.

Loaded Paper. Papeteries de Malaucène (Louis P. Schweitzer and Albert Renard, inventors). Fr. pat. 752,628 (Sept. 27, 1933).—Titanium oxide, pure or mixed with other products, is used as loading for thin paper weighing 10 to 50 g. per sq. m. The titanium oxide is fixed by mordanting with tennin, aluminum sulphate, etc.—A. P.-C.

Homogenizing Suspensions of Solids Such as Pigments or Fillers for Paper Manufacture. Harold R. Rafton assignor to Raffold Process Corp. U. S. pats. 1,934,637 to 1,934,642 (Nov. 7, 1933).—*No. 1,934,637.*—Various details of operation are described by which oversize solid particles may be reduced in size by passing them in liquid suspension under high pressure through a restricted orifice. *Nos. 1,934,638,-639* relate to the application of the process of the preceding patent to the production of an alkaline filler for paper making. *Nos. 1,934,640,641* relate to the application of the same process to the production of satin white "color" for coating paper. *No. 1,934,642* provides for the application of the same process to the preparation of clay for loading paper.—A. P.-C.

Dyes and Dyeing

Dyestuff Problems. J. R. Roberts. Paper Mill 57, No. 4: 4, 10 (Jan. 27, 1934).—A brief discussion of fastness to light, to acid, to alkali and to chlorine, and of two-sidedness.—A. P.-C.

Some Problems of Fading of Paper. Julius Grant. World's Paper Trade Rev. 100: 1866, 1904, 1906, 1944, 1946, 1984-1989 (Dec. 15, 22, 1933); Paper Maker & Brit. Paper Trade J. 87: TS59-63 (Feb. 1, 1934).—The possibilities of making fading tests by noting the minimum time required to produce a change in the fluorescence of the sample when exposed to unfiltered light of the mercury arc lamp were investigated, and showed, among other things, that the method is particularly suited for routine testing, where colors of known nature are under investigation. It was applied to the study of the fastness of colored papers and of the effects of sizing on fastness.—A. P.-C.

Color Problems in Fillers. John R. Roberts. Paper Mill 56, No. 43: 9-10 (Oct. 28, 1933).—A brief discussion of the problems in paper coloring occasioned by the use of fillers.—A. P.-C.

Process for the Production of Colored Mottled Designs on a Paper Base. Emil Bernstein, Kaschau, Slowakia. Czech. pat. 42,616.—J. F. O.

Dyeing Paper. Soc. Pour l'Industrie Chimique à Bâle. Fr. pat. 42,623 (Aug. 23, 1933).—Addn. to 693,-172.—Water-soluble salts of basic compounds containing a basic nitrogen atom and an aliphatic radical having at least 10 carbon atoms, other than those of Fr. pat. 693,172, are used to form insoluble compounds with soluble dyes in dyeing paper or pulp.—A. P.-C.

Improvements in the Production of Light-Fast Shades by Beater Coloring. M. Niederhauser. Papier 37: 71-73 (Jan., 1934).—Attention is drawn to the merits of Diazol Lumière, Solanthrene and Lutetia dyestuffs, of Etablissements Kuhlmann, for the production of fast shades on bleached pulps.—A. P.-C.

Dyes and Dyeing

Process of Decorating Webs of Paper. Russell S. Bracewell assignor to The Marvellum Co. U. S. pat. 1,930,-036 (Oct. 10, 1933).—A paper web is decorated by forming a color film, transferring it without disrupting its continuity to a moving liquid carrier, applying additional color to portions of the transferred film, and bringing a traveling surface of the paper web into contact with the carrier surface to take off the color film.—A. P.-C.

Dyeing Paper or Pulp. Société pour l'Industrie Chimique à Bâle. Brit. pat. 396,992 (Aug. 17, 1933).—Dyeings or printings fast to water are produced on paper (pulp) by treating, either simultaneously or separately, with a water-soluble dye containing one or more HSO_3 and (or) COOH groups and a water-soluble salt of a com-

pound that contains at least one basic nitrogen and an aliphatic saturated residue comprising at least 10 carbon atoms (other than a salt of an unsymmetrical mono or diacylated diamine or a corresponding quaternary ammonium compound). In examples (1) paper halfstuff is dyed vivid green by treating with Benzyl Green B and then with a solution of the stearic acid ester of oxyethylpyridinium chloride and (2) tissue paper is dyed with Direct Safranine B or Kiton Blue A and treated in a bath containing octodecyltrimethylammonium methosulphate.—A. P.-C.

Drying

Apparatus for Drying Paper. Frank C. Ladd. U. S. pat. 1, 949,125 (Feb. 27, 1934).—The invention provides an improvement in the loft drying of paper. The paper is first fed horizontally back and forth through a series of supporting belt conveyors where it undergoes a preliminary air drying. One edge is then gripped in a series of clamps carried by an endless conveyor, and the clamps are gradually tilted so that the sheet is carried in a vertical plane, the path being sufficiently long to allow of complete air drying. The clamps are then tilted back so as to restore the sheet to a horizontal plane, but with its sides reversed (the side that was underneath at the wet end being uppermost at the dry end). At frequent intervals, while the sheet is held vertically, the clamps are successfully opened and closed so as to release the strains set up in the paper due to shrinkage.—A. P.-C.

Dewatering Apparatus. Hobert W. French. U. S. pat. 1,949,998 (March 6, 1934).—The cylinder mold is built up of a number of spaced perforated discs mounted on a spindle and carrying a cylindrical shell. The shell has a series of elongated perforations each inclined at an acute angle to the axis of the shell, and which constitute 50% of the area of the shell. A face wire is wrapped around the shell.—A. P.-C.

Process and Arrangement for the Operation of a Suction Cylinder for the De-Watering of Ground Wood, Pulp and Similar Materials. Sverre Diesen, Oslo. Ger. pat. 591,468 (July 22, 1927).—J. F. O.

Device for Regulating the De-Watering of Stock on Fourdriniers for Paper, Carton and Similar Materials. Heidenheim, Brenz. Ger. pat. 591,715 (April 17, 1932). Scrappers, arranged under the wire, are so fastened and balanced that they touch the under side of the wire and thereby remove water.—J. F. O.

New Pulp Drying Apparatus. W. Schmid. Papier Fabr. 31, No. 31: 417-19 (July 30, 1933).—A description of some of the new methods of drying pulp, those utilizing warm air and those using a part of the dryer cylinders and a warm air chamber. In the two stage system, the pulp is dried to 65 per cent on the drying cylinders and finished at 90 per cent in the warm air chambers. With more care devoted to the drying of the pulp, a better pulp is produced, and often a pulp which has been cooked properly has its strength qualities reduced by improper drying.—J. F. O.

Regulating Device for Drying by Means of Steam Heated Drying Bodies. Siemens & Halske Akt. Ges., Vienna. Aust. pat. 134,771 (April 15, 1933).—J. F. O.

Process for the Drying of Board, Ground Wood or Pulp Boards Which Are Finished on One or Both Sides. Karl Kubik and Eduard Saller, Prague. Czechoslavakia pat. 41,757. The drying and smoothing takes place in one operation by placing the boards in piles between smooth heating plates.—J. F. O.

Process for the Operation of Drum Filters which Serves for the De-Watering of Cellulose. John Strindlund, Tofte, Norway. Czech. pat. 42,297,—J. F. O.

Paper Specialties

Paper. James J. O'Connor and Donald F. Morris assignors to The Mead Corp. U. S. pat. 1,935,482 (Nov. 14, 1933).—Book paper is formed from a fibrous furnish mixed with a lime-sludge body filler (lime sludge being used which is obtained in the recovery of pulp cooking liquor).—A. P.-C.

Preventing Expansion and Contraction of Printing Paper. Joseph L. Kelly, Rudolf Brenner and John P. Hoffer. U. S. pat. 1,937,703 (Dec. 5, 1933).—Paper in stacks or rolls is treated at the edge portions of the stack or roll with a pore-sealing solution containing beeswax and paraffin oil.—A. P.-C.

Preserving Fibrous Materials Such as Insulation Board. Elbert C. Lathrop and Fergus A. Irvine assignors to The Celotex Co. U. S. pat. 1,935,196 (Nov. 14, 1933).—A colloidal complex comprising ferric hydroxide and arsenious acid is used as an impregnating material. —A. P.-C.

Fiber Board and Method of Manufacturing Same. Robert G. Quinn assignor to International Paper Co. U. S. pat. 1,939,082 (Dec. 12, 1933).—Pulp stock impregnated with fireproofing salts and having a pH of substantially 5.2 is mixed with a colloidal suspension of bituminous material that is precipitated at this pH.

Laminated Board Top or Covering for Furniture. Alka T. A. Heitz. U. S. pat. 1,942,287 (Jan. 2, 1934).—A sanitary top for tables, etc., comprises a foundation sheet of relatively strong fabric on which are adhesively superposed a number of sheets of paper adapted to be removed one at a time without tearing, to expose a new surface.—A. P.-C.

Pulp Board. Hubert L. Becher assignor to The Agasote Milboard Co. U. S. pat. 1,939,616 (Dec 12, 1933).—The product consists of a compressed mixture of about 1 to 4 parts of paraffin and from one-quarter to 1 part of Montan wax (a substantial portion of which is in the form of a metallic salt) to 100 parts of fiber. The paraffin and Montan wax are precipitated from a suitable emulsion, so as to distribute them evenly through the fiber and in a very fine state of subdivision.—A. P.-C.

Mineral Coated Paper. Donald B. Bradner assignor to The Champion Coated Paper Co. U. S. pat. 1,936,-286 (Nov. 21, 1933).—A paper having a uniformly smoothly homgeneous and flat coating, free from skips, ridges, ripples, brush marks, etc., is obtained by applying excess of the coating "color" to the surface of the paper and removing the excess by means of a doctor roll which is at a predetermined distance from the paper, the two surfaces moving in opposite directions and the surface speed of the doctor roll being greater than one-seventh and less than equal to that of the paper.—A. P.-C.

Corrugated Reinforced Board. Albert Fraisse and Léon Joseph Mistarlet. Fr. pat. 42,741; addn. to Fr. pat. 743,824.—The original patent covers a corrugated board faced on one or both sides with wood or cardboard. The present improvement comprises reinforcing the corrugated sheet with metal wires running transversely to the corrugations and which may be corrugated in the same operation as the board sheet. In addition, the corrugated board sheet may be given supplementary corrugations, larger than and at right angles to the original corrugations.—A. P.-C.

Glazed Board ("Presspan") Having Marbled or Granite Effects. Minguet et Thomas. Fr. pat. 750,149. —A thin layer of stock of the same or similar nature as the main sheet, but of different color, is applied to the main sheet on the machine wire.—A. P.-C.

IMPORTS OF PAPER AND PAPER STOCK

NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

NEW YORK IMPORTS

WEEK ENDING JULY 28, 1934

CIGARETTE PAPER

H. H. Strauss, Ile de France, Havre, 85 cs.; De Manduit Paper Corp., Washington, Havre, 105 cs.

WALL PAPER

———, Europa, Bremen, 3 cs.; ———, Washington, Havre, 9 cs.; J. E. Bernard & Co., Washington, Havre, 1 cs.

PAPER HANGINGS

W. H. S. Lloyd & Co., Franconia, Southampton, 4 bls.

NEWSPRINT

Gilman Paper Co., Hammaren, Kotka, 220 rolls; Jay Madden Corp., Washington, Hamburg, 131 rolls; Walker Goulard Plehn Co., Washington, Hamburg, 86 bls.; ———, Washington, Hamburg, 285 rolls; Gilman Paper Co., Tremorvah, Port Alfred, 366 rolls; ———, Tremorvah, Port Alfred, 612 rolls; American Jewish Publishing Corp., Nordhval, Three Rivers, 920 rolls; Perkins Goodwin & Co., A. Ballin, Hamburg, 194 rolls; Jay Madden Corp., A. Ballin, Bremen, 133 rolls; H. G. Craig, Donnacona 2, Montreal, 581 rolls; International Paper Co., Cornerbrook, Dalhousie, 4239 rolls.

PRINTING PAPER

Steiner Paper Corp., Portland, Bremen, 15 cs.; Steiner Paper Corp., A. Ballin, Bremen, 10 cs.; E. Dietzgen & Co., A. Ballin, Hamburg, 5 cs.; F. C. Strype, Veendam, Rotterdam, 10 cs.

WRAPPING PAPER

Rohner Gehrig & Co., J. Jadot, Antwerp, 1 cs.; Keller Dorian Paper Co., Excalibur, Marseilles, 9 cs.

DRAWING PAPER

H. Reeve Angel & Co., Inc., Franconia, Southampton, 4 cs.

FILTER PAPER

H. Reeve Angel & Co., Inc., Franconia, Southampton, 9 cs.

BASIC PAPER

———, J. Jadot, Antwerp, 10 cs.; Globe Shipping Co., A. Ballin, Bremen, 1 crate; Dingelstedt & Co., A. Ballin, Bremen, 13 cs.; F. C. Strype, A. Ballin, Bremen, 18 crates, 3 cs.

METAL COATED PAPER

K. Pauli Co., Portland, Bremen, 42 cs.; K. Pauli Co., A. Ballin, Bremen, 53 cs.; ———, A. Ballin, Hamburg, 5 cs.

SURFACE COATED PAPER

Globe Shipping Co., Portland, Bremen, 15 crates; Phoenix Shipping Co., Washington, Hamburg, 4 cs.; Chas. Happel, A. Ballin, Hamburg, 1 cs.; Globe Shipping Co., A. Ballin, Bremen, 50 crates.

PHOTO PAPER

American Express Co., A. Ballin, Hamburg, 36 cs.; J. J. Gavin, Berengaria, Southampton, 5 cs.

TRACING PAPER

Titan Shipping Co., Portland, Bremen, 11 cs.

TISSUE PAPER

W. J. Byrnes, Majestic, Southampton, 1 cs.

MISCELLANEOUS PAPER

The Borregaard Co., Inc., Gripsholm, Gothenburg, 344 rolls, 38 bls.; F. L. Kramer & Co., Gripsholm, Gothenburg, 138 bls.: Blauvelt Wiley Paper Manfg. Co., Gripsholm, Gothenburg, 45 rolls, 18 bls.; Japan Paper Co., Ile de France, Havre, 7 cs.; F. L. Kramer & Co., Ile de France, Havre, 3 cs.; Keuffel & Esser Co., Washington, Hamburg, 88 cs.; H. C. Davison Co., Pr. Pierce, Yokohama, 2 cs.

RAGS, BAGGINGS, ETC.

F. Stern, Portland, Bremen, 37 bls. rags; ———, Excalibur, Alexandria, 103 bls. rags; E. J. Keller Co., Inc., Excalibur, 100 bls. rags; Banco Coml. Italiane Trust Co., A. Ballin, Hamburg, 125 bls. jute waste; Chase National Bank, A. Ballin, Hamburg, 54 bls. rags; A. W. Fenton, Inc., Winona County, Manchester, 21 bls. bagging; E. Butterworth & Co., Inc., Winona County, Manchester, 29 bls. new cuttings; Leigh Textile Co., Winona County, Manchester, 20 bls. cotton waste; ———, Winona County, Manchester, 77 bls. cotton waste; Royal Manfg. Co., Winona County, Manchester, 38 bls. cotton waste.

BONE GLUE

———, A. Ballin, Hamburg, 40 bags.

OLD ROPE

———, American Banker, London, 52 coils; ———, Gourko, Newcastle, 119 coils; W. Steck & Co., Winona County, Manchester, 40 coils.

CHINA CLAY

Orbis Products Trading Co., Britannic, Liverpool, 120 bags; Whitaker, Clark & Daniels, Britannic, Liverpool, 390 bags.

CASEIN

———, Northern Prince, B. Ayres, 84 bags; National City Bank, Northern Prince, B. Ayres, 334 bags; D. C. Andrews & Co., A. Ballin, Hamburg, 50 bags.

WOOD PULP

Perkins Goodwin & Co., Gripsholm, Gothenburg, 137 bls. sulphate; Lagerloef Trading Co., Hammaren, Wiborg, 5438 bls. sulphite; Lagerloef Trading Co., Hammaren, Wiborg, 2280 bls. sulphate; Lagerloef Trading Co., Hammaren, Kotka, 2594 bls. sulphate; Bank of N. Y. Trust Co., A. Ballin, Hamburg, 140 bls. wood pulp, 28 tons; Bulkley Dunton & Co., Cliffwood, ———, 3375 bls. wood pulp.

WOOD PULP BOARDS

Lagerloef Trading Co., Hammaren, Kotka, 246 bls., 19 rolls.

ALBANY IMPORTS

WEEK ENDING JULY 28, 1934

Bulkley Dunton & Co., T. Fagelund, ———, 625 bls. wood pulp.

PORTLAND IMPORTS

WEEK ENDING JULY 28, 1934

Bulkley Dunton & Co., Bockenheim, ———, 625 bls. wood pulp; Gottesman & Co., Inc., Bockenheim, Sweden, 4225 bls. wood pulp.

BOSTON IMPORTS

WEEK ENDING JULY 28, 1934

G. F. Malcolm Co., Inc., Britannic, Liverpool, 2 cs. tissue paper; Royal Manfg. Co., Britannic, Liverpool, 19 bls. cotton waste; E. Butterworth & Co., Inc., Winona County, Manchester, 36 bls. new cuttings; Harris & Co., Winona County, Liverpool, 20 bls. waste paper; Bulkley Dunton & Co., Binnendyk, ———, 548 bls. wood pulp.

PHILADELPHIA IMPORTS

WEEK ENDING JULY 28, 1934

Irving Trust Co., America, Porsgrund, 750 bls. mechanical pulp; ———, America, Drammen, 83 rolls newsprint; Irving Trust Co., America, Oslo, 900 bls. chemical pulp; J. Andersen & Co., America, Greaker, 600 bls. sulphite; ———, Excalibur, Alexandria, 64 bls. rags; Phila. National Bank, Winona County, Liverpool, 71 bls. bagging; Chemical Bank Trust Co., Delaware, Tofte, 2150 bls. sulphate; Atterbury Bros., Inc., Delaware, Tofte, 150 bls. sulphate; The Borregaard Co., Inc., Delaware, Hurum, 672 bls. wood pulp; ———, Delaware, Drammen, 516 rolls newsprint; Castle & Overton, Inc., Eifel, Hamburg, 3200 bls. wood pulp; N. Y. Trust Co., Eifel, Hamburg, 400 bls. wood pulp; Bulkley Dunton & Co., Cliffwood, ———, 625 bls. wood pulp.

BALTIMORE IMPORTS

WEEK ENDING JULY 28, 1934

Congoleum Nairn Co., Exiria, Naples, 145 bls. rags; ———, Winona County, Liverpool, 145 coils old rope; Bulkley Dunton & Co., City of Hamburg, ———, 500 bls. wood pulp; Bulkley Dunton & Co., Bockenheim, ———, 375 bls. wood pulp.

NORFOLK IMPORTS

WEEK ENDING JULY 28, 1934

Dixie Jute Bagging Corp., Winona County, Manchester, 64 bls. bagging.

Fraser Co's. Defer Bond Interest

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., July 30, 1934—Acting in accordance with the terms of the reorganization effected in 1932, Fraser Companies, Limited, have announced that interest will not be paid in cash for the year 1934 on the 6% first mortgage bonds. K. S. Maclachlan, president, in a letter to the shareholders explains that this decision has been arrived at in order to permit the company to further strengthen its working capital position, which has improved considerably since the beginning of the year. Failing immediate settlement in cash, the deferred interest is payable in five equal annual instalments commencing July 1, 1939, but bondholders have the option of accepting, in lieu of the 1934 interest, common shares of the company at the rate of five shares for each $1000 bond. This option must be exercised not later than September 1st.

Figures for the half year to June 30 show a sharp improvement over last year. Consolidated earnings, before interest and depreciation, amounted to $839,760 for the six months, as against $1,115,540 for the full year 1933. After interest charges, but before depreciation, the earnings were $348,083 for the six months, as against a deficit of $82,632 for the entire 1933 year. As compared with December 31, 1933, working capital on June 30 had been improved from a debit of $89,086 to an excess of assets of $530,352, while combined bank loans were reduced by over $36,000.

The improvement in operating results for the past six months was the result of a reduction in costs and improvement in prices for the company's products. Volume remains unsatisfactory, and the president states that it is likely to remain so for the balance of the year unless there is a material improvement in conditions in the United States.

Whitaker Paper Co. Earnings Increase

[FROM OUR REGULAR CORRESPONDENT]

DAYTON, Ohio, July 30, 1934.—In addition to reporting a marked increase in earnings, directors of the Whitaker Paper Company, Cincinnati, declared the first dividend on common stock since April, 1931, it was reported here the past week.

A payment of $1 was ordered to be distributed August 10 to stockholders of record July 31. The 1931 dividend was also a dollar disbursement.

For the six months ended June 30, the company reports net profit of $129,008, after provision for Federal taxes; for the corresponding period in 1933 the net profit was $19,110, while profit for the entire year was $158,420.

The total current assets increased from $2,193,093 on June 30, 1933, to $2,356,767 on June 30, 1934, and total current liabilities were reduced from $315,379 to $295,080, the comparative balance sheets reveal.

Parsons & Whittemore's New Line

Parsons & Whittemore, Inc., 10 East 40th Street, New York, old established pulp and paper mill agents, are expanding their business for the formation of a new department under the direction of H. A. Buffard. This department, which will be known as the General Sales Department, will handle felts, wires, etc.

Parsons & Whittemore, Inc., have been appointed sales agents for the Mount Vernon-Woodberry Mills, makers of the well-known Mount Vernon Plain Weave and Richland Triplex Drier Felts.

New York Market Review

Office of the PAPER TRADE JOURNAL,
Wednesday, August 1, 1934.

Conditions in the local paper market are about normal for the time of year. Demand for practically all the standand grades of paper is mainly along seasonal lines. Sales forces of the leading paper organizations are planning for a strenuous autumn campaign. Prices are holding to formerly quoted levels, in most instances.

The newsprint paper market is moderately active. Manufacturing operations in the United States, Canada and Newfoundland are being maintained in sufficient volume to take care of current requirements. Accumulations at the mills are not excessive. There is much discussion of higher prices, due to rising production costs.

Demand for the various grades of fine paper is light. Prices are holding to schedule. Tissues are moving into consumption in fair volume. The coarse paper market is steady, with kraft wrapping paper and summer specialties in good request. The paper board market is softer and quotations are easier.

Mechanical Pulp

The ground wood pulp market is practically marking time. Despite the unusually long dry summer the statistical position of the industry is unchanged. Production in North America and abroad is keyed to capacity and stocks at the mills are not excessive. Quotations are generally well maintained.

Chemical Pulp

Steadiness prevails in the chemical pulp market. Shipments from the Pacific Coast are starting again with the termination of the longshoremen's strike. Supplies from the Scandinavian countries are arriving in good volume. Prices on the various domestic and imported grades are holding to schedule.

Old Rope and Bagging

The old rope market is listless. Demand for domestic and foreign old manila rope is restricted. Small mixed rope is moving slowly. Old rope prices remain unchanged. The bagging market is irregular. While gunny bagging is slightly firmer, scrap bagging is quiet. Roofing bagging is arousing little interest at present.

Rags

Sentiment is improving in the domestic rag market. Demand for new cotton rags is slightly better. No. 1 white shirt cuttings and fancy shirt cuttings are steadier. Roofing grades are fairly active. The position of the imported rag market is practically unchanged.

Waste Paper

Board mill demand for the lower grades of paper stock is improving. Strictly folded news and No. 1 mixed paper are stronger. In some quarters the view is expressed that firmer prices are developing. The higher grades of waste paper are steady, especially white envelope cuttings and hard and soft white shavings.

Twine

The local twine market is exhibiting a slightly stronger undertone. While most of the business transacted of late has been along routine lines the outlook for the closing months of the year is regarded as promising. Despite the usual keen competition prices are holding up well and shading is infrequent.

Scott Paper Sales Increase

A special from the *Philadelphia Financial Journal* states that the Scott Paper Company report for the first six months of 1934 shows a substantial increase in sales, both in unit and dollar volume over the corresponding period of last year. Sales amounted to $4,521,356 against $3,833,-092 for the corresponding period last year, or 1,077,856 cases against 953,585.

Appropriations for advertising and sales promotion work have been increased greatly over last year, with many salesmen added to the selling force in the past six months. The management plans to continue the present sales program through the balance of the year.

The company has been fostering the use of paper towels for home use, notably through a kitchen towel, and this branch of the business is increasing, although still small.

Net profit for the period amounted to $419,171 against $383,667 in the like 1933 period. Net profit, therefore, showed a smaller percentage increase than sales. One reason for this was the increased appropriation for selling expense. An additional influence was higher manufacturing costs caused by NRA.

Earnings for the six months amounted to $2.06 a share on common stock against $1.81 in the six months of 1933.

Cash at the mid-year stood at $1,021,020 against $620,-106 at the end of June, 1933. Current assets amounted to $3,427,242 against current liabilities of $435,983, a ratio of 7.8 to 1. A year ago the current ratio was 7.1 to 1.

The company has declared a quarterly dividend of 42½ cents on the common stock, payable September 30 to stock of record September 15. Previously the company paid 37½ cents quarterly on common.

Gardner-Richardson Warehouse Burned

[FROM OUR REGULAR CORRESPONDENT]

DAYTON, Ohio, July 30, 1934.—Flames razed the storage warehouse of the Gardner-Richardson Paper Company in Middletown late Thursday afternoon last, causing an estimated loss of $15,000 and slight injury to one man. The loss is mostly covered by insurance. The fire, believed to have been caused by spontaneous combustion, started in the warehouse on Fleming Road at 5 o'clock. One thousand tons of baled waste paper were stored in the building.

Miscellaneous Markets

Office of the PAPER TRADE JOURNAL
Wednesday, August 1, 1934

BLANC FIXE.—The position of the blanc fixe market is practically unchanged. Prices are holding to schedule. The pulp is quoted at from $42.50 to $45 per ton, in bulk; while the powder is selling at from 3½ to 3¾ cents per pound, in barrels, at works.

BLEACHING POWDER.—Steadiness prevails in the bleaching powder market. The contract movement is normal for the time of year. Prices remain unchanged. Bleaching powder is quoted at from $1.90 to $2.15 per 100 pounds, in drums, at works.

CASEIN.—The casein market is practically marking time. Domestic standard ground is still quoted at 12½ cents and finely ground at 13 cents per pound. Quotations on Argentine standard ground and finely ground have been temporarily withdrawn.

CAUSTIC SODA.—Business in the caustic soda market is moderately active. Prices remain unchanged. Solid caustic soda is quoted at from $2.60 to $3.10; while the flake and the ground are selling at from $3 to $3.05 per 100 pounds, in large drums, at works.

CHINA CLAY.—The china clay market is displaying strength. Contract shipments are moving in good volume. Imported china clay is still quoted at from $13.50 to $21 per ton, ship side; while domestic paper making clay is selling at from $5 to $12 per ton, at works.

CHLORINE.—Production of chlorine is being maintained in sufficient volume to take care of current requirements. Prices remain unchanged. Chlorine is quoted at from $2 to $2.25 per 100 pounds, in tanks, or multi-unit cars, in ton lots, or over, at works.

ROSIN.—The rosin market is slightly easier. Paper making rosin is quoted at from $5.35 to $5.45 per 280 pounds, in barrels, at works; wood rosin at $4.35 per 280 pounds, in barrels, and rosin wax size at 5 cents per pound, at shipping point.

SALT CAKE.—Demand for salt cake is fairly persistent. The contract movement is well up to average. Salt cake is quoted at from $12 to $14 and chrome salt cake at from $12 to $12.50 per ton, at works. Imported salt cake is selling at from $12 to $12.50 per ton, on dock.

SODA ASH.—The soda ash market is rather quiet, due mainly to seasonal causes. Shipments against contract are moving in moderate volume. Prices remain unchanged. Quotations on soda ash, in car lots, at works, are as follows: in bulk, $1.10; in bags, $1.40; and in barrels, $1.50.

STARCH.—Conditions in the starch market are fairly satisfactory, although prices are inclined to fluctuate from time to time. Special paper making starch is now quoted at $3.12 per 100 pounds, in bags; and at $3.29 per 100 pounds, in barrels.

SULPHATE OF ALUMINA.—Most of the business transacted in the sulphate of alumina market was along routine lines. Commercial grades are quoted at from $1.35 to $1.50; while iron free is selling at from $1.90 to $2.05 per 100 pounds, in barrels, at works.

SULPHUR.—The sulphur market continues steady. Sulphur is quoted at $18 per long ton on orders of 1,000 tons, or over, on yearly contracts; and at $20 per ton on any smaller quantity over that period. On spot and near by car loads the quotation is $21 per ton.

TALC.—Paper mill demand for talc is fairly active. The contract movement is seasonal. Prices remain unchanged. Domestic talc is quoted at from $16 to $18 per ton, in bulk, at eastern mines; while imported talc is selling at from $23 to $30 per ton, on dock.

Market Quotations

Paper

(F. o. b. Mill)

Ledgers	6.50	@	—
Bonds	6.00	@	—
Index	6.00	@	—
Writings—			
Extra Superfine	6.50	@	—
Superfine	6.25	@	—
Tub sized	5.75	@	—
Engine sized	5.50	@	—
Book, Cased—			
S. & S. C.	5.35	@	5.75
S. & S. C. Litho.	5.60	@	6.00
M. F.	5.10	@	5.50
Coated and Enamel	5.90	@	6.55
Coated Litho	5.90	@	6.55
Tissues—Per Ream—			
White No. 1	.82½	@	.85
White No. 2	.67½	@	—
Anti-Tarnish M. G. only	1.00	@	—
Colored	.85	@	—
Kraft	.70	@	—
Manila	.67½	@	.70
Manila—			
No 1 Jute	9.00	@	9.25
No. 2 Jute	7.75	@	8.50
No. 1 Wood	4.00	@	5.25
No. 2 Wood	3.50	@	4.00
Butchers	4.00	@	4.50
Fibre Papers—			
No. 1 Fibre	4.25	@	5.50
No. 2 Fibre	4.00	@	4.75
Common Bogus	1.50	@	3.00
Screenings	2.50	@	3.50
Glassine—			
Bleached	.11	@	—
Unbleached	.09	@	—

(The following Quotations are Delivered New York)

News, per ton—			
Roll, contract	40.00	@	—
Rolls, spot	40.00	@	—
Sheets	45.00	@	—
Kraft—			
No. 1 Domestic	4.75	@	5.00
No. 2 Domestic	3.87½	@	—
Southern	3.87½	@	—
Boards—per ton—			
News	40.00	@	45.00
Chip	37.50	@	40.00
Egl. Mla. Ll. Chip	47.50	@	52.00
Jute Lined Chip	47.50	@	52.00
White Patent Coated	57.50	@	65.00
Binders Boards	67.00	@	75.00

Mechanical Pulp

(On Dock, Atlantic Ports)

No. 1 Imported—		
Moist	27.00	@ 29.00
Dry	27.00	@ 30.00
(F.o.b. Mill)		
No. 1 Domestic and Canadian	24.00	@ 29.00

Chemical Pulp

(On Dock, Atlantic, Gulf and West Coast Ports)

Bleached Sulphite (Domestic and Foreign)—			
Division 1	2.85	@	—*
Division 2	2.80	@	—*
Division 3	2.75	@	—*
Prime Qualities—			
Class 1. All Prime Easy Bleaching	2.25	@	—*
Other Than Easy Bleaching—			
Class 2. Higher Than Standard	2.20	@	—*
Class 3. Standard	2.15	@	—*
Class 4. Lower than Standard	2.10	@	—
(On Dock, Atlantic Ports)			
Kraft No. 1	1.85	@	1.90
Kraft No. 2	1.60	@	1.70
(F.o.b. Pulp Mill)			
Kraft Domestic	1.60	@	2.75
(Delivered)			
Soda Bleached	2.50	@	—

*Add 60 Cents per short ton, dock charges, for Albany; $2.00 for Lake Ports East and $3.00 for Lake Ports West of Mackinac Straits.

Domestic Rags

New Rags
(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—			
New White, No. 1	6.50	@	7.00
Silesias No. 1	4.25	@	4.50
New Unbleached	6.75	@	7.25
New Soft Blacks	3.00	@	3.25
Blue Overall	4.00	@	4.25
Fancy	2.50	@	2.75
Washables	1.75	@	2.00
Mixed Khaki Cuttings	3.00	@	3.25
O. D. Khaki Cuttings	3.75	@	4.00
Men's Corduroy	1.50	@	1.75
New Mixed Blacks	2.50	@	2.75

Old Rags

White, No. 1—			
Repacked	3.00	@	3.50
Miscellaneous	2.75	@	3.25
White, No. 2—			
Repacked	1.75	@	2.25
Miscellaneous	1.50	@	1.75
Thirds and Blues—			
Repacked	1.50	@	1.75
Miscellaneous	1.25	@	1.50
Black Stockings	2.50	@	3.00
Roofing Rags—			
No. 1	1.10	@	1.25
No. 2	.80	@	.85
No. 3	.70	@	.75
No. 4	.65	@	.70
No. 5A	.60	@	.65

Foreign Rags

New Rags

New Dark Cuttings	1.60	@	1.70
New Mixed Cuttings	1.75	@	1.85
New Light Silesias	3.75	@	4.00
Light Flannelettes	3.75	@	4.00
Unbleached Cuttings	6.50	@	6.75
New White Cuttings	6.50	@	6.75
New Light Oxfords	3.25	@	3.50
New Light Prints	2.75	@	3.00

Old Rags

No. 1 White Linens	7.50	@	8.00
No. 2 White Linens	6.50	@	7.00
No. 3 White Linens	4.50	@	5.00
No. 4 White Linens	2.25	@	2.50
No. 1 White Cotton	4.25	@	4.75
No. 2 White Cotton	3.25	@	3.75
No. 3 White Cotton	2.50	@	2.75
No. 4 White Cotton	1.90	@	2.15
Extra Light Prints	2.00	@	2.25
Ord. Light Prints	1.75	@	1.85
Med. Light Prints	1.55	@	1.65
Dutch Blue Cottons	1.75	@	1.85
French Blue Linens	2.30	@	2.40
German Blue Linens	2.15	@	2.25
German Blue Cottons	1.70	@	1.80
Checks and Blues	1.30	@	1.40
Linsey Garments	1.40	@	1.60
Dark Cottons	1.00	@	1.10
Old Shopperies	.95	@	1.00
New Shopperies	.90	@	1.00
French Blues	1.70	@	1.80

Old Rope and Bagging

(Prices to Mill f. o. b. N. Y.)

Gunny No. 1—			
Foreign	1.50	@	1.60
Domestic	1.40	@	1.50
Wool Tares, light	1.20	@	1.30
Wool Tares, heavy	1.20	@	1.30
Bright Bagging	1.15	@	1.25
Manila Rope—			
Foreign	2.35	@	2.45
Domestic	2.25	@	2.50
Small Mixed Rope	1.10	@	1.35
New Burlap Cut	2.00	@	2.25
Hessian Jute Threads—			
Foreign	2.60	@	2.75
Domestic	2.80	@	3.00

Old Waste Papers

(F. o. b. New York)

Shavings—			
White Envelope Cuttings	2.70	@	2.80
Ordinary Hard White No. 1	2.15	@	2.25
Hard White No. 2	1.95	@	2.05
Soft White No. 1	1.85	@	1.95
Flat Stock—			
Stitchless	.80	@	.90
Over issue Mag.	.80	@	.90
Solid Flat Book	.65	@	.75
Crumpled No. 1	.60	@	.65
Solid Book Ledger	1.50	@	1.65
Ledger Stock	1.00	@	1.10
New B. B. Chips	.30	@	.35
Manilas—			
New Env. Cut	1.70	@	1.80
New Cuttings	1.35	@	1.45
Print	Nominal		
Bogus Wrapper	.40	@	.50
Container	Nominal		
Old Kraft Machine—			
Compressed bales	1.10	@	1.20
News—			
No. 1 White News	1.00	@	1.10
Strictly Overissue	.65	@	.70
Strictly Folded	.35	@	.45
No. 1 Mixed Paper	.20	@	.25

ENGLISH ECCO CLAYS CLAYS

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SVANÖ AKTIEBOLAG
Svanö, Sweden

Twines
(F. o. b. Mill)

Cotton—			
B. C. 18 basis	.30	@	.32
No. 1	.20	@	.22
No. 2	.19	@	.20
No. 3	.17	@	.18
A. Italian, 18 basis	.36	@	.37
Finlsaed Jute—			
Dark, 18 basis	.18	@	.20
Light, 18 basis	.20	@	.22
Jute Wrapping, 3-6 Ply—			
No. 1	.15½	@	.16½
No. 2	.15	@	.16
Tube Rope—			
4-ply and larger	.09¼	@	.09¾
Fine Tube Rope—			
4-ply	.11¼	@	.11¾
3-ply	.14¼	@	.14¾
2-ply	.14¼	@	.14¾
Paper Makers Twine	.08¼	@	.13¼
Box Twine, 2-3 ply	.14¼	@	.14¾
White Hemp	.13¼	@	.16¾
Java Sisal—			
No. 1 Basis	.11½	@	—
No. 2 Basis	.10½	@	—
New Zealand Sisal	.11½	@	—
Sisal Lath Yarn—			
No. 1	.13½	@	.15½
No. 2	.11½	@	.13½
Manila Twine	.24½	@	.29½

CHICAGO

Paper
(F. o. b. Mill)

Rag Bond	.12	@	.50
Water Marked Sulphite Bond	.06¾	@	.11
Sulphite Bond	.05½	@	.11
Superfine Writing	.18	@	.44
No. 1 M. F. Book	.06½	@	.07¾
No. 2 M. F. Book	.05¾	@	.06¾
No. 1 S.&S.C. Book	.06¾	@	.07¾
No. 2 S.&S.C. Book	.05¾	@	.06½
Coated Book	.07	@	.12
Coated Label	.07	@	.08½
No. 1 Manila	.04¾	@	.05¼
No. 1 Fibre	.04¾	@	.05¼
No. 2 Manila	.04¼	@	.04¾
Butcher's Manila	.03¼	@	.03¾
No. 1 Kraft	4.75	@	5.00
Southern Kraft	3.88	@	4.25
No. 2 Kraft	3.88	@	4.25
Wood Tag Boards	.04¾	@	.06¾
Sulphite Screenings	.03	@	.03¼
Manila Tissue	.05¾	@	.07
White Tissue	.07	@	.09

(Delivered Central Territory)

News, per ton—			
Rolls, contract	41.00	@	—
Sheets, open	46.00	@	51.00
Boards, per ton—			
Plain Chip	46.50	@	—
Solid News	50.00	@	—
Manila Lined Chip	55.00	@	—
Patent coated	65.00	@	—
Container Lined—			
85 Test, per 1000 sq. ft.			1.70
100 Test, per 1000 sq. ft.			1.85

Old Papers
(F. o. b. Chicago)

Shavings—			
No. 1 White Envelope cuttings	1.70	@	2.00
No. 1 Hard White	1.40	@	1.65
No. 1 Soft White	1.25	@	1.50
Ledger & Writings	.70	@	.80
Solid Books	.60	@	.70
Blanks	1.00	@	1.05
Krafts	.80	@	.90
New Kraft Cuts	1.20	@	1.30
Manila Env. Cuts	1.25	@	1.30
Ex. No. 1 Manila	.90	@	1.00
Print Manila	.50	@	.55
Overissue News	.60	@	.70
Old Newspapers—			
No. 1	.50	@	.55
Mixed Papers—			
No. 1	.30	@	.35
Roofing Stocks—			
No. 1	30.00	@	—
No. 2	28.00	@	—

PHILADELPHIA

Paper
(Delivered Philadelphia)

Bonds	.05-9/10	@	.38
Ledgers	.06 9/10	@	.40
Cuttings—			
Superfine	.10	@	.18
Extra Fine	.15	@	.24
Fine	.15	@	.26
Fine No. 2	.10	@	.25
Fine No. 3	.05	@	.06
Book, M. F.	.05¾	@	.06¼
Book, S. S. & C.	.05	@	.07½
Book, Coated	.06½	@	.09
Coated Lithograph	.06¾	@	.08½
Label	.07	@	.11
No. 1 Jute Manila	6.25	@	—
Manila Sul., No. 1	5.25	@	—
Manila No. 2	3.00	@	—
No. 1 Kraft	5.00	@	—
Southern Kraft	4.75	@	—
Common Bogus	.03	@	.04½
News Print Rolls	46.00	@	55.00
Straw Board	40.00	@	45.00
News Board	50.00	@	—
Chip Board	45.00	@	—
Wood Pulp Board	70.00	@	85.00
Binder Boards—			
No. 1, per ton	75.00	@	80.00
No. 2, per ton	70.00	@	75.00
Carload lots	65.00	@	70.00
Tarred Felts—			
Regular	52.25	@	54.23
Slaters (per roll)	.84	@	.94
Best Tarred, 1-ply (per roll)	1.93	@	2.10
Best Tarred, 2-ply (per roll)	1.50	@	1.65
Best Tarred, 3-ply	2.00	@	2.25

Domestic Rags (New)
(Price to Mill, f. o. b. Phila.)

Shirt Cuttings—			
New White, No. 1.	.03½	@	.04
New White, No. 2.	.02½	@	.04
Light Silesias	.02½	@	.03
Silesias, No. 1	.03	@	.03½
Black Silesias, soft.	.02½	@	.03
New Unbleached	.05	@	.05½
Washable, No. 1	.01½	@	.02
Blue Overall	.03½	@	.04
Cottons—According to grades—			
Washable, No. 2	.02½	@	.03
New Blue	.01½	@	.03
Fancy	.01½	@	.03
New Black Soft	.02	@	.04
New Light Seconds	.01½	@	.02
New Dark Seconds	1.50	@	1.75
Khaki Cuttings—			
No. 1 O.D.	.03	@	.04
No. 2 Mixed	.03	@	.04
Corduroy	.02	@	.03
New Canvas	.03½	@	.04½
New Black Mixed	.02½	@	.03½

Domestic Rags (Old)

White No. 1—			
Repacked	2.50	@	3.50
Miscellaneous	1.75	@	2.25
M. G.	3.00	@	3.75
Thirds and Blues—			
Miscellaneous	1.00	@	1.50
Repacked	1.50	@	2.00
Black Stockings (Export)	2.00	@	3.50
Roofing Stock—			
Foreign No. 1	.50	@	.75
Repacked	.70	@	.85

Bagging
(F. o. b. Phila.)

Gunny, No. 1—			
Foreign	1.25	@	1.50
Domestic	1.50	@	1.75
Manila Rope	2.00	@	2.25
Sisal Rope	1.25	@	1.50
Mixed Rope	1.00	@	1.10
Scrap Burlaps—			
No. 1	1.25	@	1.50
No. 2	.80	@	1.00
Wool Tares, heavy	2.75	@	—
Mixed Strings	1.15	@	1.25
No. 1 New Light Burlap	2.25	@	2.50
New Burlap Cuttings	2.00	@	2.25

Old Papers
(F. o. b. Phila.)

Shavings—			
No. 1 Hard White	2.25	@	2.30
No. 2 Hard White	1.90	@	2.00
No. 1 Soft White	1.80	@	1.85
No. 2 Soft White	1.25	@	1.50
No. 1 Mixed	—	@	.75
No. 2 Mixed	—	@	.50
Solid Ledger Stock	1.50	@	1.60
Writing Paper	1.10	@	1.20
No. 1 Books, heavy	—	@	.70
No. 2 Books, light	—	@	.50
No. 1 New Manila	—	@	1.40
No. 1 Old Manila	—	@	.70
Print Manila	—	@	.60
Container Manila	—	@	.50
Old Kraft	1.00	@	1.10
Common Paper	—	@	.20
No. 1 Mixed Paper	—	@	.25
Straw Board Chip	—	@	.30
Binders Board Chip	—	@	.30
Corrugated Board	—	@	.50
Overissue News	—	@	.50
Old Newspapers	—	@	.30

BOSTON

Paper
(F. o. b. Mill)

Ledgers—			
Sulphite	.06	@	.12½
Rag Content	.12	@	.30
All Rag	.36	@	.52½
Bonds—			
Sulphite	.07¼	@	.11
Rag Content	.12	@	.30
All Rag	.36	@	.65
Writings	.06½	@	.20
Superfines	.11	@	.31
Book, Super	.06	@	.09
Book, M. F.	.05½	@	.08½
Book, Coated	.08½	@	.18
Coated Litho	.09	@	.12
Label	.09½	@	.15
Jute Manila No. 1	.11	@	.13
Manila, Sul. No. 1	.04¾	@	.06¼
Manila, Sul. No 2	.03¾	@	.04½
No. 1 Kraft	.04¾	@	.05
No. 2 Kraft	.03¾	@	.04¼
(F. o. b. Boston)			
Southern Kraft	.03¾	@	.04¼

(F. o. b. destination in carload lots, f. o. b. mill in less than carload lots.)

Common Bogus	.02	@	.02¼
(Delivered New England points)			
News Print, rolls	44.50	@	—
Straw Board, rolls	.009	@	35.00
Straw Board in Sheets, basis 35s to 70s	—	@	40.00
Filled News Board	40.00	@	45.00
Chip Board	37.50	@	40.00
Chip Board (Creasing)	37.50	@	40.00
Single Manila Lined Chip	47.50	@	52.50
Single White, Patent Coated News Board (Bender)	57.50	@	65.00
"Over" lining board	70.00	@	75.00
Binder Boards (Standard Grade)	67.00	@	75.00

Old Papers
(F. o. b. Boston)

Shavings—			
No. 1 Hard White	2.20	@	2.35
No. 1 Soft White	1.75	@	2.00
No. 2 Mixed	.75	@	.80
Solid Ledger Books	1.75	@	—
Overissue Ledger Stock	1.15	@	1.30
Mixed Ledgers	.95	@	1.05
No. 1 Books, heavy	.85	@	.95
No. 1 Books, light	.65	@	.75
Crumpled Stitchless Book Stock	.50	@	.60
Manila Env. Cuttings	1.25	@	1.30
No. 1 Old Manila	.75	@	.80
White Blank News	.95	@	1.05
No. 1 Kraft	1.00	@	1.05
Manila	.70	@	.75
No. 1 Mixed Papers	.15	@	.20
Print Manila	.40	@	.45
Overissue News	.45	@	.50
Old Newspapers	.30	@	.35
Box Board Chips	.32½	@	.35
Corrugated Boxes	.32½	@	.35
Screening Wrappers	.50	@	.60

Bagging
(F. o. b. Boston)

Manila Rope—			
Foreign	2.00	@	2.12½
Domestic	2.25	@	2.37½
Transmission Rope	—	@	1.25
Mixed Strings	—	@	.30
Jute Rope	1.50	@	1.60
Jute Carpet Threads	.65	@	.70
Gunny No. 1—			
Foreign	1.40	@	1.45
Domestic	1.12½	@	1.17½
Bleachery Burlap	3.00	@	3.25
Scrap Burlap	1.15	@	1.20
Scrap Sisal	.90	@	1.10
Scrap Sisal for shredding	1.00	@	1.25
Wool Tares, heavy	1.25	@	1.30
New Burlap Cuttings	1.25	@	1.50
Australian Wool Pouches	2.25	@	2.50
Heavy Baling Bagging	1.40	@	1.50
Paper Mill Bagging	.90	@	1.10
Bagging No. 2	.50	@	.55

Domestic Rags (New)
(F. o. b. Boston)

Shirt Cuttings—			
New Light Prints	.01¾	@	.02
New White No. 1.	.06	@	.06½
New White No. 2.	.04	@	.04½
Silesias No. 1	.04	@	—
New Black Silesias	.02½	@	.03
New Unbleached	.06½	@	.07
Blue Cheviot	—	@	4.65
Fancy	—	@	.02½
Washable	.02¼	@	—
Cottons—According to grades—			
Blue Overalls	—	@	.03¾
New Black, soft	.04	@	.04½
Khaki Cuttings	.03	@	.03¼
O. D. Khaki	.02¾	@	.03
Corduroy	.01¾	@	.02
New Canvas	—	@	.05
B.V.D. Cuttings	—	@	.06¾

Domestic Rags (Old)
(F. o. b. Boston)

Canvas	.04½	@	—
White No. 1—			
Repacked	—	@	3.00
Miscellaneous	2.50	@	2.75
White No. 2—			
Repacked	2.00	@	2.75
Miscellaneous	2.00	@	2.25
Twos and Blues	1.25	@	1.50
Thirds and Blues			
Repacked	2.00	@	2.75
Miscellaneous	2.00	@	2.25
Black Stockings	2.25	@	2.50
Roofing Stock			
No. 1	.80	@	.85
No. 2	.65	@	.70
No. 3	.55	@	.60

Foreign Rags
(F. o. b. Boston)

Dark Cottons	.85	@	.95
New White Shirt Cuttings	5.50	@	6.00
Dutch Blues	2.00	@	2.50
New Checks & Blues	2.50	@	3.00
Old Fustians	1.55	@	1.60
Old Linsey Garments	1.25	@	1.35

TORONTO

Paper
(F. o. b. Mill)

Bond—			
No. 1 Sulphite	.10¼	@	—
No. 2 Sulphite	.08½	@	—
No. 1 Colored	.10¼	@	—
No. 2 Colored	.09	@	.10
Ledgers (sulphite)			
Ledgers, No. 1	.34½	@	—
Ledgers, No. 2	.25½	@	—
Writing	.09	@	.09½
Book—			
No. 1 M. F. (Carloads)	6.20	@	—
No. 3 M. F. (Carloads)	5.70	@	—
No. 4 M. F. (carloads)	4.75	@	—
No. 1 S. C. (carloads)	6.65	@	—
No. 3 S. C. (carloads)	6.20	@	—
No. 4 S. C. (carloads)	5.20	@	—
No. 1 Coated and Litho	12.00	@	—
No. 2 Coated and Litho	10.50	@	—
No. 3 Coated and Litho	9.50	@	—
Coated tinted	14.00	@	—
Wrapping—			
Rag Brown	4.25	@	—
White Wrap	2.22½	@	—
"B" Manila	4.75	@	—
No. 1 Manila	5.25	@	—
Fiber	5.25	@	—
Kraft, M. F.	5.75	@	—
Kraft No. 2	5.25	@	—

News, per ton—			
Rolls (contract)	45.50	@	—
Sheets	50.50	@	—

Pulp
(F. o. b. Mill)

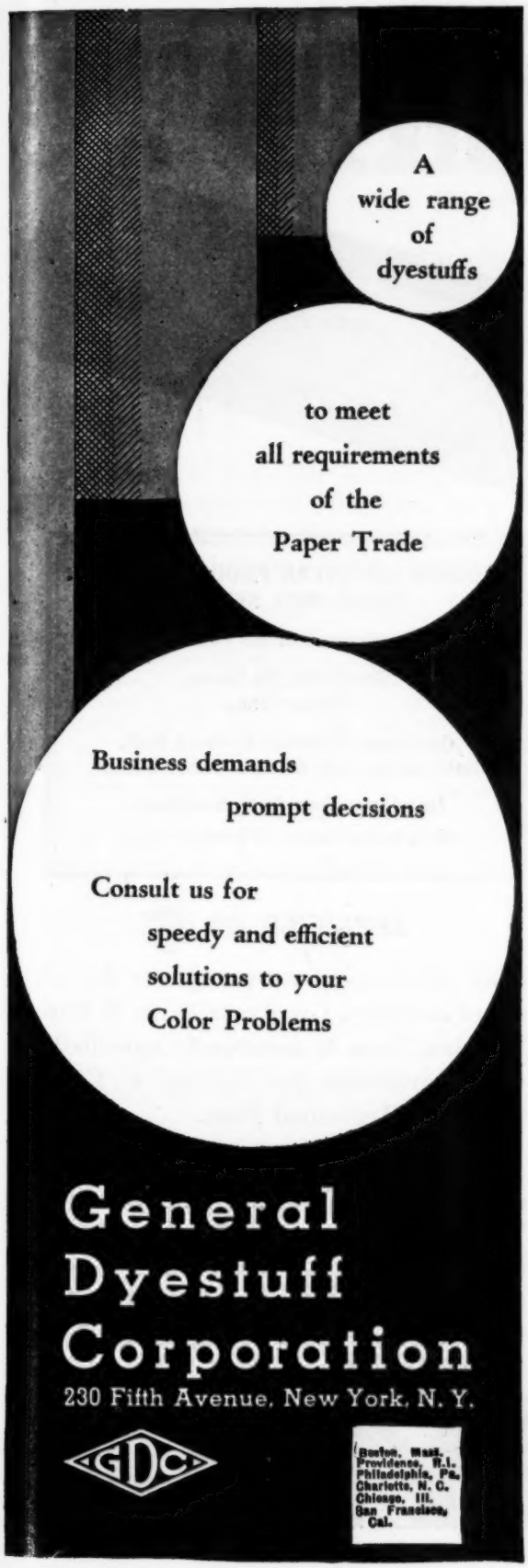
Ground Wood	18.00	@	20.00
Sulphite easy bleaching	40.00	@	—
Sulphite, news grade	38.00	@	—
Sulphite, bleached	50.00	@	55.00
Sulphate	50.00	@	—

Old Waste Paper
(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. Cut	2.00	@	2.30
Soft White	1.60	@	1.90
White Blk. News	1.25	@	1.40
Book and Ledger—			
Flat Magazine and Book Stock (old)	.90	@	1.00
Light and Crumpled Book Stock	.80	@	.90
Ledgers and Writings	1.00	@	1.05
Manilas—			
New Manila Cut	1.25	@	1.50
Printed Manilas	.70	@	.60
Kraft	1.25	@	1.50
News and Scrap—			
Strictly Overissue	.80	@	—
Strictly Folded	.60	@	—
No. 1 Mixed Paper	.50	@	—

Domestic Rags
(Price to mills, f. o. b. Toronto)

No. 1 White Shirt Cuttings	.06	@	.06¼
Fancy Shirt Cuttings	.02¼	@	.02½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PAPER TRADE JOURNAL
ESTABLISHED 1872
SIXTY-THIRD YEAR
THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY AND THE PIONEER PUBLICATION IN ITS FIELD
Published Every Thursday by the LOCKWOOD TRADE JOURNAL CO., Inc.
GEO. S. MACDONALD, President. J. BANNINGA, Sec.-Treas.
Published at 34 No. Crystal St., East Stroudsburg, Pa.
Executive and Editorial Offices: 15 West 47th Street, New York
Chicago Office: 123 West Madison St.

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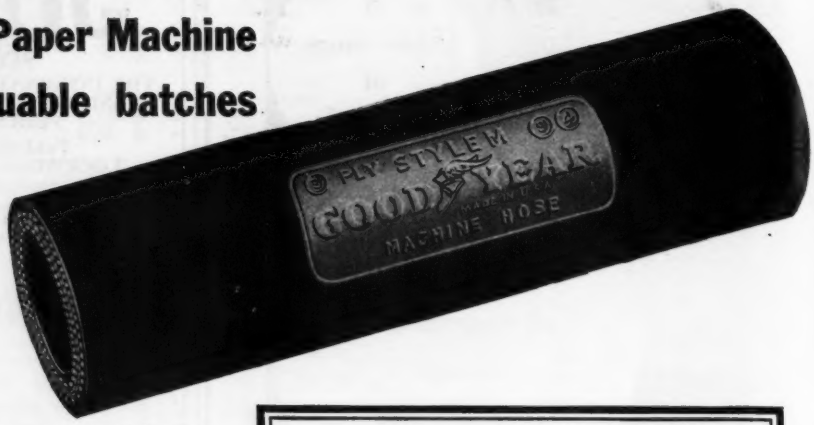
Goodyear Style M Paper Machine Hose protects valuable batches

Rubber nozzle prevents injury to screens



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